FINAL ENVIRONMENTAL DOCUMENT

Section 362, Title 14, California Code of Regulations

Regarding

Bighorn Sheep Hunting

March 22, 2005

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF FISH AND GAME

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CHAPTER 1. SUMMARY

SUMMARY OF PROPOSED ACTIONS

The existing mammal hunting regulations, which are adopted by the Fish and Game Commission (Commission) at least once every three years, provide for hunting of mature Nelson bighorn rams. The proposed action would add a new hunt zone in the White Mountains area and adjust the number of tags for existing bighorn sheep hunting areas. By continuing regulations providing for the limited sport hunting of mature Nelson bighorn ram, the Commission would be implementing Section 4902, Fish and Game Code (Appendix 1). The Commission's action would also be consistent with the wildlife conservation policy adopted by the Legislature (Section 1801, Fish and Game Code). The State's wildlife conservation policy, among other things, contains an objective of providing sport hunting of wildlife resources where such use is consistent with maintaining healthy wildlife populations. The project being considered is described as a proposal to implement sport hunting as an element of Nelson bighorn sheep management. Based on an analysis of the potential effects of the proposed action on bighorn sheep and the environment, the project has been designed to maintain healthy bighorn sheep herds in the hunt zones.

Existing law (Section 4902, Fish and Game Code) allows the Commission to authorize sport hunting of mature Nelson bighorn rams in management units for which plans are developed (Section 4901, Fish and Game Code). The existing law also specifies that the Commission may authorize the take of no more than 15 percent of the mature Nelson bighorn rams from each management unit, as determined by the Department of Fish and Game's (Department) annual population estimate. Based on the information collected by the Department and other Federal, State, and local agencies, the Department estimates the 2004 statewide bighorn sheep population at 3,600 animals distributed in approximately 61 separate herds. The Commission has been notified by the Department of this estimate; therefore, the Commission may authorize the take of a limited number of mature Nelson bighorn rams by establishing the areas, seasons and hours, bag and possession limits, and the number of rams that may be taken pursuant to its regulations.

State law requires that the Commission review the mammal hunting regulations at least once every three years, and that the Department present its recommendations for changes to the mammal hunting regulations to the Commission at a public meeting in February. Based on the Department's recommendations, as well as recommendations and comments from other agencies and the general public, the Commission may implement

changes to the mammal hunting regulations, including hunting of mature Nelson bighorn rams.

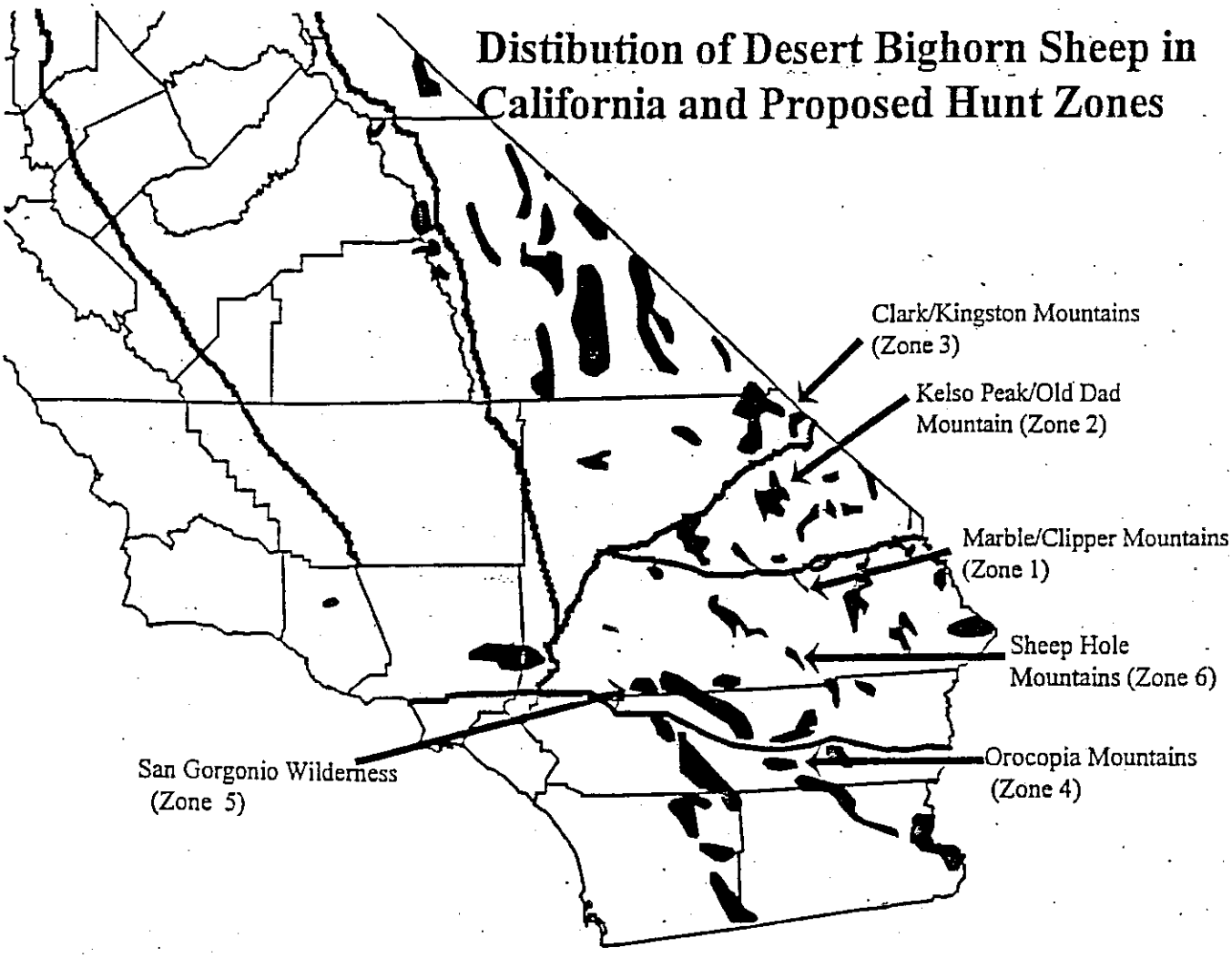
PROPOSED PROJECT

The Department is recommending that the Commission adopt regulations that will provide for taking no more than 15 percent of the mature Nelson bighorn rams from each management unit. In addition, a new hunt area is added as Zone 7 in the White Mountains. The new hunt zone is: That portion of Mono County within a line beginning at U.S. Highway 6 and the Mono-Inyo county line; northward on Highway 6 to the California-Nevada State Line; southeasterly along the California-Nevada State Line to the Mono-Inyo County Line; westward along the Mono-Inyo County Line to the point of beginning.

TABLE 1-1
Range of Proposed Tags to be Allocated

Hunt Zone	Range of Proposed Tag Allocation
Zone 1 - Marble Mountains	2-4
Zone 2 - Kelso Peak/Old Dad Mountains	2-4
Zone 3 - Clark/Kingston Mountain Ranges	0-2
Zone 4 - Orocopia Mountains	0-2
Zone 5 - San Gorgonio Wilderness	0-2
Zone 6 - Sheep Hole Mountains	0-2
Zone 7 - White Mountains	0-4
Fund-Raising Tags	0-2
TOTAL	4-22

FIGURE 1
Location of Nelson Bighorn Sheep Hunt Zones



Within this allocation, fund-raising tags will continue to be made available to take a ram from any hunt zone. The number of fund-raising cannot exceed 15 percent of the total number of hunting tags allocated for all hunting zones. The number of public hunting tags allocated is determined by counts and surveys made by the Department and will not exceed 15 percent of the mature rams estimated in each unit.

The Department is also providing the Commission with one hunting alternative to the proposed action, which could feasibly attain the basic objectives of the project. Under this alternative, tags would be issued as listed in Table 1-2.

TABLE 1-2
Alternative Tag Allocation

Hunt Zone	Alternative Tag Allocation
Zone 1 - Marble Mountains	1
Zone 2 - Kelso Peak/Old Dad Mountains	1
Zone 3 - Clark/Kingston Mountain Ranges	1
Zone 4 - Orocopia Mountains	1
Zone 5 - San Gorgonio Wilderness	0
Zone 6 - Sheep Hole Mountains	1
Zone 7 - White Mountains	1
Open Zone Fund-Raising Tag	1
TOTAL	7

In addition, two alternatives which do not involve public hunting are also presented for consideration. They include relocating mature rams and the "no-hunting" alternative. Under the "no-hunting" alternative, a combination of management options are available under existing authority, such as relocation of bighorn sheep. However, exclusive use of relocation is considered separately as well.

EFFECTS ON THE ENVIRONMENT

Table 1-3 summarizes the findings of the Department. There are no significant adverse impacts associated with the proposed project, or any of the project alternatives.

TABLE 1-3
Effects on the Environment of Limited Public Hunting of Bighorn Sheep

Alternative	Significant Impact	Nature of Impact	Mitigation Available	Nature of Mitigation
Proposed Project: Adding new hunt area and Modifying number of tags	No	None	N/A	N/A
Alternative 1: No recreational hunting. Continue the translocation of bighorn sheep into historical habitat	No	None	N/A	N/A
Alternative 2*: Translocate rams in lieu of hunting	No	None	N/A	N/A
Alternative 3: Lower hunting harvest of mature rams	No	None	N/A	N/A

* *These alternatives eliminate the proposed public hunting element as part of the Department's bighorn sheep management program.*

PUBLIC INPUT AND AGENCY CONSULTATION

The Legislature has delegated authority to the Commission, whose members are appointed by the Governor, to regulate the take and possession of wildlife. The Legislature has further directed the Commission to hold public meetings at least once every three years for the purpose of considering and adopting revisions to regulations relating to hunting and trapping of mammals (sections 200-207, Fish and Game Code; Appendix 1). Recommendations and comments from the Department, other agencies, and the public are received at all three public meetings.

The California Environmental Quality Act (CEQA) encourages public input. One of the primary purposes of the environmental document review process is to obtain public comment, as well as to inform the public and decision makers. It is the intent of the Department to encourage public participation in this environmental review process.

Prior to preparing this environmental document, the Department developed a Notice of Preparation (NOP). On December 6, the NOP was provided to the State Clearinghouse for distribution, as well as to land management agencies in California that have an interest or play a key role in Nelson bighorn sheep management [including the U.S. Fish and Wildlife Service (USFWS), Bureau of Land Management (BLM), National Park Service (NPS) and U.S. Forest Service (USFS)]. The NOP requested that any comments regarding input to the environmental document be submitted to the Department within 30 days of receipt of the NOP.

The Department has also encouraged public input into the environmental document by scheduling a scoping session to discuss documents prepared in support of mammal hunting and trapping regulations. The scoping session was held January 11, 2005, in Sacramento.

The Department prepared a draft environmental document (DED) regarding bighorn sheep management (Section 362, Title 14, CCR). The DED was made available for public review on February 4, 2005. It was mailed to individuals and organizations who expressed interest in this issue. The individuals and organizations which received the DED are listed in Appendix 4. Additionally, notice of availability of the DED for public review was provided to the State Clearinghouse, which provided notice of availability to over 880 organizations, including all county governments in California. Notice of availability was also published in 24 major California newspapers. Each of the 24 newspapers has a daily circulation exceeding 50,000. The DED was also made available in the Department=s six regional offices and in the Department=s Bishop, Eureka, Menlo Park, and San Diego satellite offices. During the 45-day notice period the draft environmental document was available for public review and no comments were received regarding the document. Also, a letter was received from Ms. Terry Roberts, Senior Planner, State Clearinghouse, noting that the Department had complied with the CEQA review requirements for the draft environmental document and that no State agency comments were received.

AREAS OF CONTROVERSY

Hunting of mature Nelson bighorn rams is a controversial issue. Hunting results in the death of individual animals. A segment of the public has recommended that bighorn sheep hunting should not be authorized and that the loss of a single ram by hunting is a significant impact by virtue of the mortality to the individual. Additionally, others believe that the loss of mature rams may adversely affect the gene pool, the social structure of the species, and cause the population to decline. Some contend that hunting may jeopardize endangered species. Some contend that lead from hunter's bullets could cause lead poisoning in scavengers. Another segment of the public has recommended that regulated bighorn ram hunting should be authorized. This segment of the public supports limited hunting of Nelson bighorn sheep, as prescribed by the Legislature (Section 4900, Fish and Game Code).

Specific safeguards included in the proposed action, such as limited quotas for tags, regulated seasons, bag and possession limits, and close monitoring of hunter activity in the field, will result in removing rams at a level that is below the individual herds' sustained-yield capabilities. In addition, consideration is given to the welfare of individual animals pursuant to Section 203.1, Fish and Game Code. Only mature rams may be taken, no dogs may be used, and hunting pressure is held to a low level.

The Marble/Clipper Mountains, Kelso Peak/Old Dad Mountains, Clark/Kingston Mountains, Orocopia Mountains, San Gorgonio Wilderness, Sheep Hole Mountains and White Mountains herd sizes are expected to be maintained at or above approved management plan objectives, and the estimated statewide bighorn sheep population should remain at approximately 3,600 animals.

ISSUES TO BE RESOLVED

Issues to be resolved primarily relate to the decision whether or not to provide an additional hunt zone in the White Mountains area and adjust the number of hunting tags for other hunt zones and fund-raising hunts as an element of bighorn sheep management. As proposed, Nelson bighorn ram hunting would be independent of other bighorn sheep management elements, including providing public bighorn sheep viewing opportunities, relocation of animals, and natural history study and interpretive programs for bighorn sheep.

CONCLUSION

Hunting of a limited number of mature Nelson bighorn rams will result in the deaths of individual animals. This proposed addition of a new hunt zone in the White Mountains area and adjustment of the number of hunting tags for other hunt zones and fund-raising hunts is not expected to significantly reduce the size of any bighorn sheep herds. The proposed action should result in maintaining the herds at or above the approved management plan objectives. Many of the herds are geographically separated and widely distributed. Therefore, the proposed action is not expected to have a significant adverse impact on either local populations or the statewide population of bighorn sheep.

CHAPTER 2. PROJECT DESCRIPTION

PROPOSED PROJECT

The Department proposes to add a new bighorn sheep hunting zone in the White Mountains area and issue between 4 and 22 hunting tags total for all bighorn hunting. Public hunting is an existing condition and element of bighorn sheep management. Specifically, the current hunting regulations involve selected bighorn sheep herds, defined in Section 4902, Fish and Game Code, that will provide the following:

Hunt Zone	2004 Tags	Proposed Tag Allotment
1	3	2-4
2	4	2-4
3	1	0-2
4	1	0-2
5	0	0-2
6	1	0-2
7	0	0-4
Fund-raising	1	0-2
Total	11	4-22

The existing conditions of bighorn sheep hunting is summarized as follows:

1. The Season begins on the first Saturday in December and extends through the first Sunday in February for hunt zones 1-4, 6 and 7.

2. The season for hunt zone 5 begins the first Saturday in December and extends through the third Sunday in February.

3. Center-fired rifles, as described in Section 353, Title 14, CCR, and bows, and arrows as defined in Section 54, Title 14, CCR, are authorized for taking bighorn sheep.

4. The open-zone auction tagholders hunt in any hunt zone [pursuant to subsection 362(a), Title 14, CCR]. The season for fund-raising tagholders will begin on the first Saturday in November and continue through the first Sunday in February in zones 1-4, 6 and 7. In Zone 5, the season begins on the third Saturday in November and continues through the third Sunday in February. Center-fired rifles, as described in Section 353, Title 14, CCR, and bows and arrows, as defined in Section 354, Title 14, CCR, are authorized to take bighorn sheep.

   The number of tags allocated is determined by counts and surveys made by the Department, and will not exceed 15 percent of the mature rams estimated in each unit, as prescribed by Section 4902, Fish and Game Code;

5. Dogs are not be used to assist in hunting bighorn sheep;

6. Procedures for distributing general tags by public drawing;

7. A nonrefundable application fee, as provided by Section 4902, Fish and Game Code;

8. A tag fee for resident hunters, as provided by Section 4902, Fish and Game Code.

9. A $500 tag fee for nonresident hunters, as provided by Section 4902, Fish and Game Code. Section 4902, Fish and Game Code, limits license tag fees for hunting bighorn sheep to not more than $500;

10. Only persons possessing valid Nelson bighorn ram tags are allowed to hunt bighorn sheep. Tags shall not be transferable and are valid only in the zone or zones specified;

11. The individuals awarded the special fund-raising license tags and all successful applicants for general tags must attend and successfully complete a mandatory hunter orientation program. Licensed guides employed by successful applicants and the special auction tag bidder shall accompany their clients to this orientation program;

12. All tags must be returned to the Department within 10 days after the close of the season, even though the tagholder may not have killed a Nelson bighorn ram;

13. Requires that Nelson bighorn rams shall only be taken between one-half hour before sunrise and one-half hour after sunset;

14. Allows only methods specified in sections 353 and 354, Title 14, CCR, to be used for taking bighorn sheep;

15. Requires each tagholder to possess a spotting telescope capable of magnification of 15 power (15X), which is not affixed to a rifle, while hunting;

16. Requires that license tags must be completed and attached to the carcass of a bighorn ram immediately after the animal is killed;

17. Requires all successful license tagholders to notify the Department's field offices by telephone within 24 hours of killing the animal and arrange for the carcass to be examined;

18. Requires all successful bighorn sheep tagholders to have their tags validated and make the horns of each ram available to the Department to be permanently marked in the manner prescribed by the Department for identification purposes within 48 hours of killing the animal. The purpose of the permanent marking shall be to identify Nelson bighorn rams which were legally taken and which may be transported and possessed outside the hunting zones;

19. Notes that the Department reserves the right to take and use any part of a tagholder's bighorn ram, except the horns, for biological analysis, as long as no more than one pound of edible meat is removed;

20. Requires the Department to notify all tagholders by mail as to whether or not they will be required to report to the Department before hunting and upon completion of hunting. The notification shall include procedures for reporting, including appropriate methods of contacting the Department;

21. Requires the tagholder to surrender his or her tag to an employee of the Department for any or all of the following reasons:

a. Any act on the part of the tagholder which violates any of the provisions of the Fish and Game Code or any regulations of the Commission.

b. Any act on the part of the tagholder which endangers the person or property of others.

The decision of the Department in such respects shall be final and binding upon the tagholder; and

22. Defines a legal ram for the purpose of the proposed regulation.

The number of hunting tags proposed project is intended to provide scientifically based public hunting opportunities to take mature Nelson bighorn sheep rams. It is based on allowing the take of a limited number of mature rams as a biologically sound management option for selected herds, consistent with maintaining healthy bighorn sheep populations. Hunting implements sections 1801 and 4902, Fish and Game Code. Bighorn sheep hunting will be authorized for no more than 15 percent of the mature rams estimated from surveys conducted by the Department in the proposed hunt zones. As proposed, bighorn sheep hunting would be independent of other management elements, including providing public viewing opportunities, relocation of animals, research and natural history study, and interpretive programs for bighorn sheep.

As provided by existing law, the Commission is the decision-making body considering the proposed action. However, the Department has responsibility for a broad range of bighorn sheep management issues, including relocation of bighorn sheep to suitable habitat, and preparation of management plans.

PROJECT LOCATION

Marble/Clipper Mountains

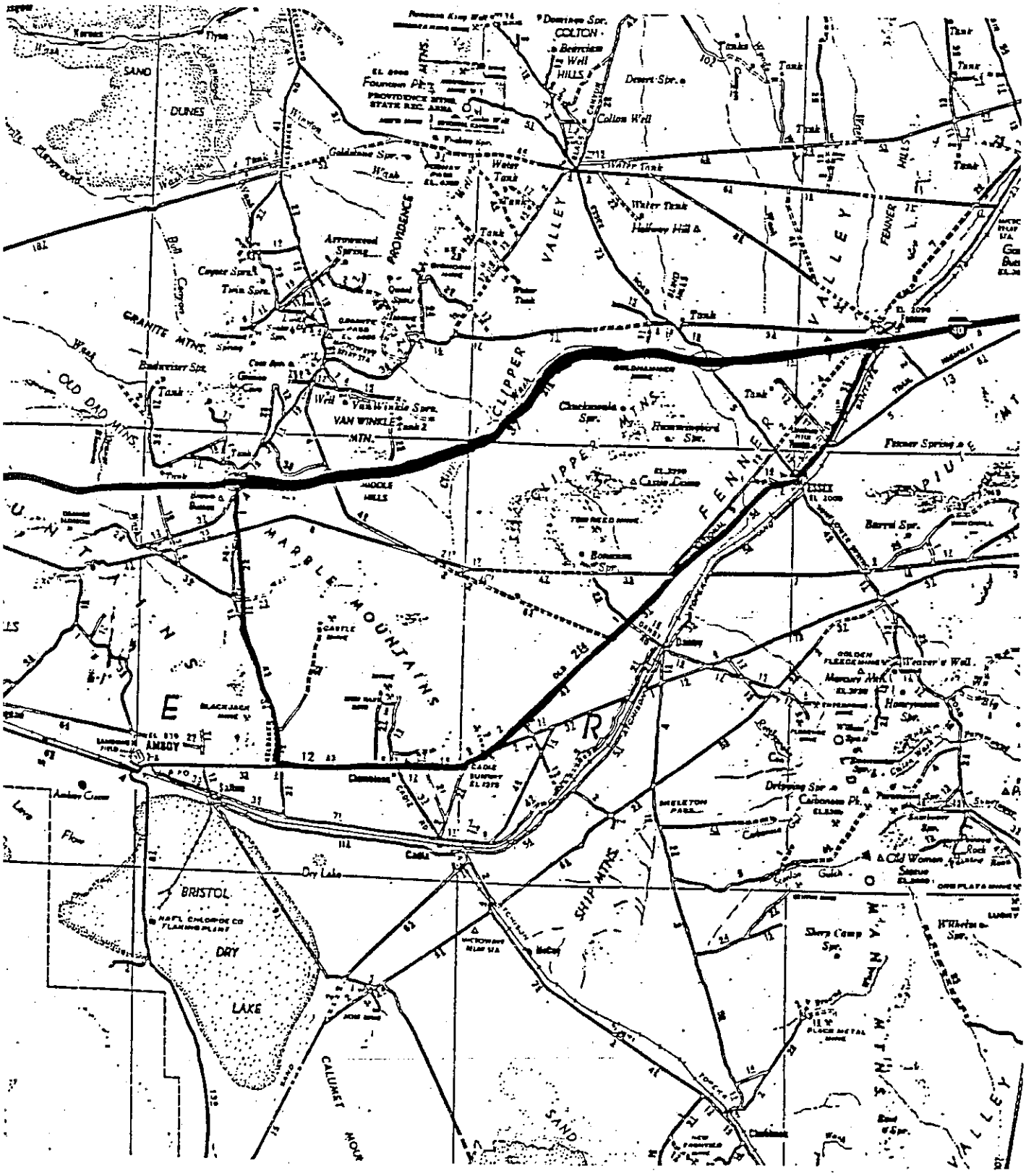
The existing hunting regulations provide for limited hunting of mature, male bighorn sheep in the Marble and Clipper Mountains bighorn sheep management unit, San Bernardino

County, California. These Mountains are located in the Mojave Desert, approximately midway between Needles and Barstow, just south of Interstate Highway 40, and just east of Kelbaker Road (Figure 2).

The area for the Marble/Clipper Mountains bighorn sheep hunt is illustrated in Figure 2 and is defined as follows: That portion of San Bernardino County beginning at the intersection of Kelbaker Road and the National Trails Highway; north on Kelbaker Road to the junction with Interstate Highway 40; east on Interstate Highway 40 to the intersection with National Trails Highway; southwest on National Trails Highway to junction with Kelbaker Road.

FIGURE 2

Location of the Marble/Clipper Mountains Bighorn Sheep Management Unit, San Bernardino County, California

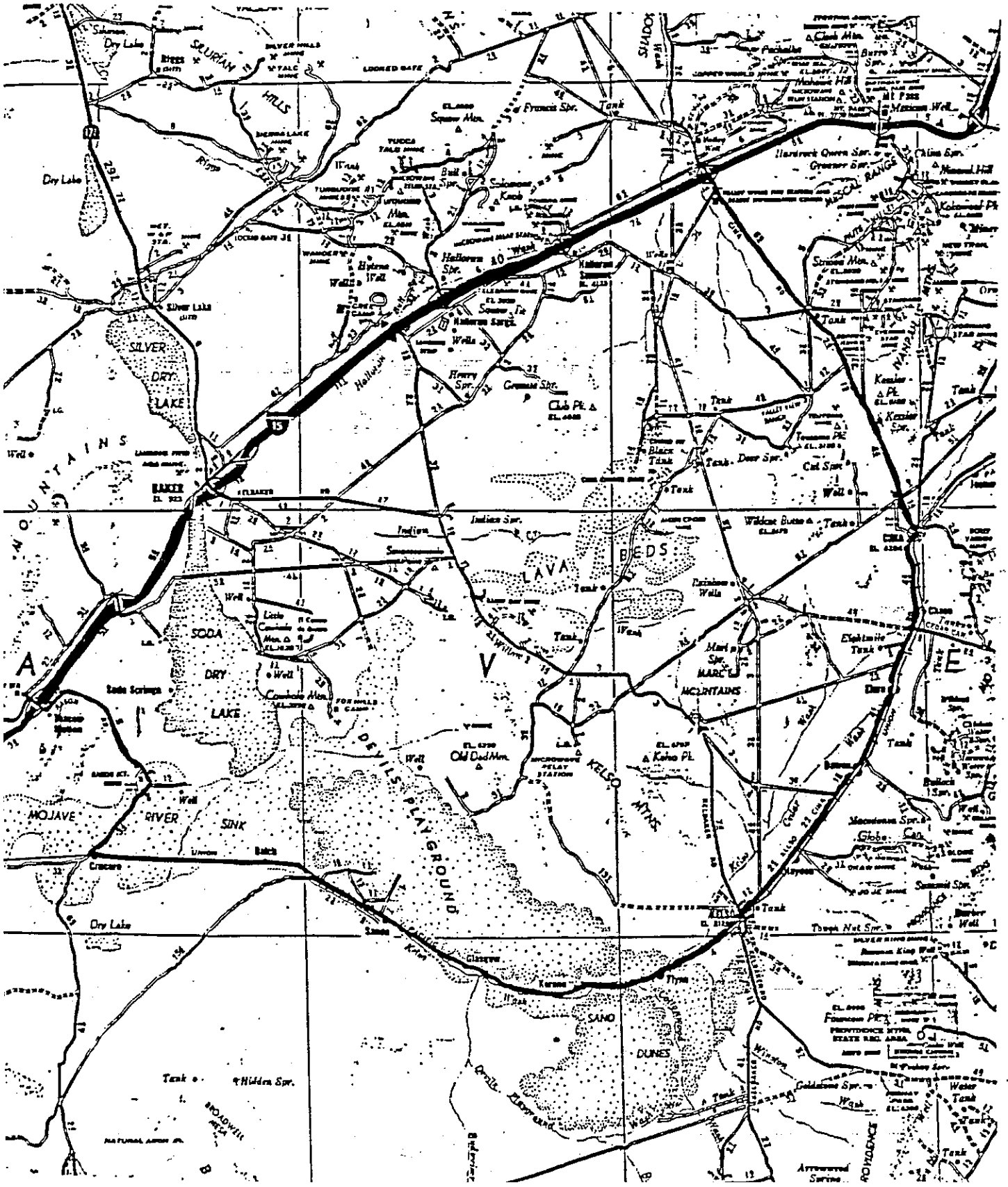


Kelso Peak/Old Dad Mountains

The existing hunting regulations provide for limited hunting of mature, male bighorn sheep in the Kelso Peak and Old Dad Mountains Bighorn Sheep Management Unit, San Bernardino County, California. This management unit is located in the Mojave Desert, and lies approximately midway between Barstow, California, and Las Vegas, Nevada, and is bounded on the west by Rasor Road, on the south by the Union Pacific railroad tracks, on the east by Cima Road, and on the north by Interstate 15 (Figure 3). Most of the land in this unit is in public ownership, administered by the BLM. There are a few, mostly small, private inholdings.

The area open to hunting for the Kelso Peak/Old Dad Mountains sheep hunt is as follows: That portion of San Bernardino County beginning at the intersection of Kelbaker Road and Union Pacific Railroad in Kelso; southwest along the Union Pacific Railroad to the intersection with unnamed road at Crucero; north on unnamed road to the junction with Rasor Road; northwest on Rasor Road to the junction with Interstate Highway 15; northeast on Interstate Highway 15 to the intersection with Cima Road; south on Cima Road to the intersection with the Union Pacific Railroad in Cima; southwest on the Union Pacific Railroad to the intersection with Kelbaker Road in Kelso.

FIGURE 3
Location of Old Dad Peak Bighorn Sheep Management Unit,
San Bernardino County, California



Clark and Kingston Mountain Ranges

The existing hunting regulations provide for limited hunting of mature, male bighorn sheep in the Clark and Kingston Mountains Bighorn Sheep Management Unit, San Bernardino and Inyo counties, California. The management units are located in the Mojave Desert and lie between Baker and the California-Nevada state line, and are bounded on the west by California State Highway 127 (Figure 4).

The area open to hunting for the Clark and Kingston Mountains sheep hunt is as follows: That portion of San Bernardino and Inyo counties beginning at the intersection of Interstate Highway 15 and California State Highway 127 in Baker; north on California State Highway 127 to the junction with Old Spanish Gentry Road to Tecopa; southeast on Old Spanish Gentry Road to the junction with Furnace Creek Road; southeast on Furnace Creek Road to the junction with Mesquite Valley Road; north on Mesquite Valley Road to Old Spanish Trail Highway; north and east on Old Spanish Trail Highway to the California-Nevada state line; southeast on the California-Nevada state line to the intersection with Interstate Highway 15; southwest on Interstate Highway 15 to the junction with California State Highway 127.

Orocopia Mountains

The existing hunting regulations provide for limited hunting of mature, bighorn sheep rams in the Orocopia Mountains Management Unit, Riverside County, California. This management unit includes the Orocopia Mountains and the Mecca Hills, east of Indio in central Riverside County. The management unit is bordered by the Coachella Canal on the west and southwest, the Bradshaw Trail on the south, and by Interstate 10 on the north. Gas Line Road is the eastern border, and it is the western border of the adjacent Chuckwalla Mountains Bighorn Sheep Management Unit. The nearest community is Chiriaco Summit, on the north along Interstate 10 (Figure 5).

FIGURE 4
Location of the Clark and Kingston Bighorn Sheep Management Units,
San Bernardino and Inyo Counties, California

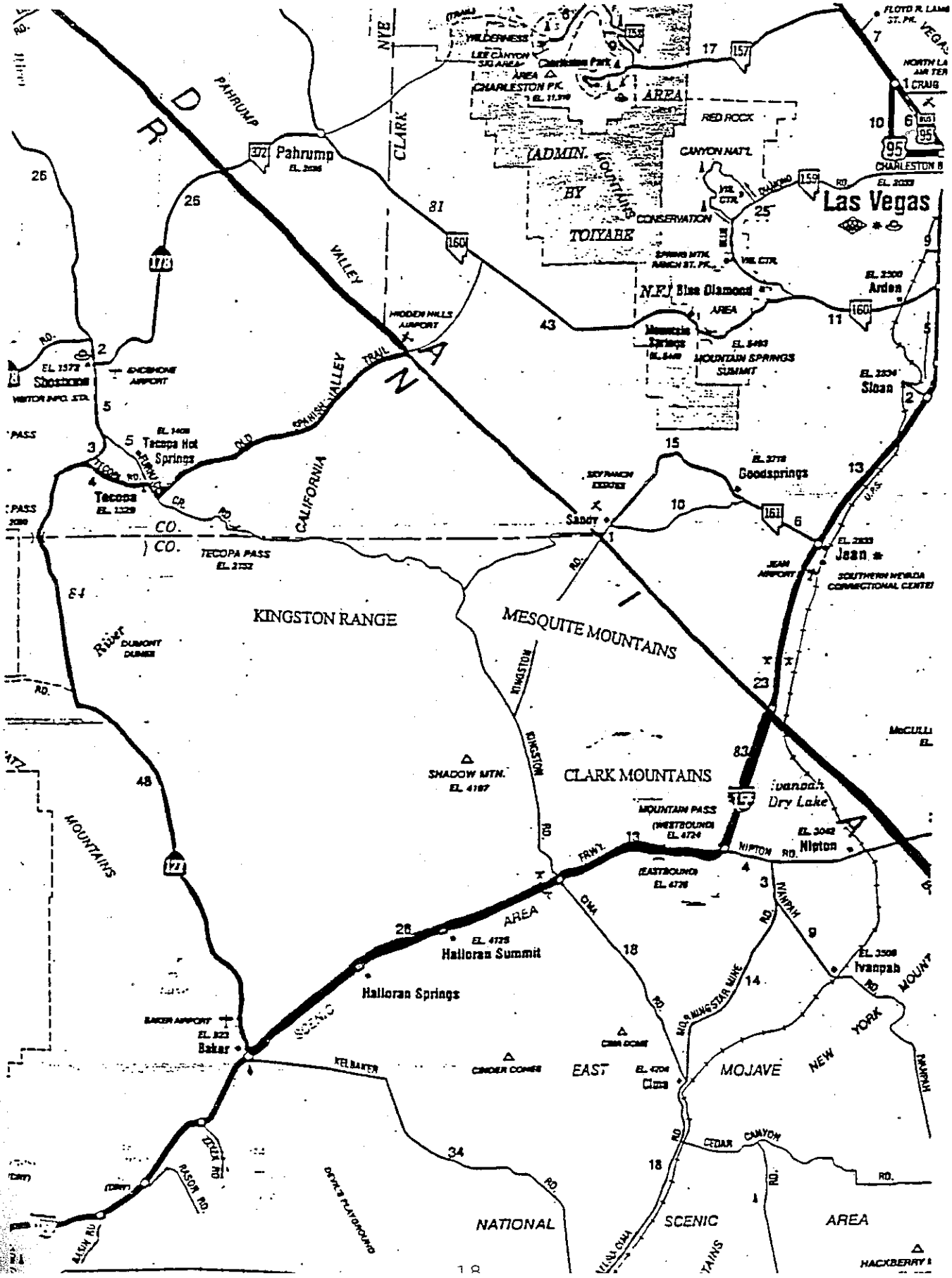
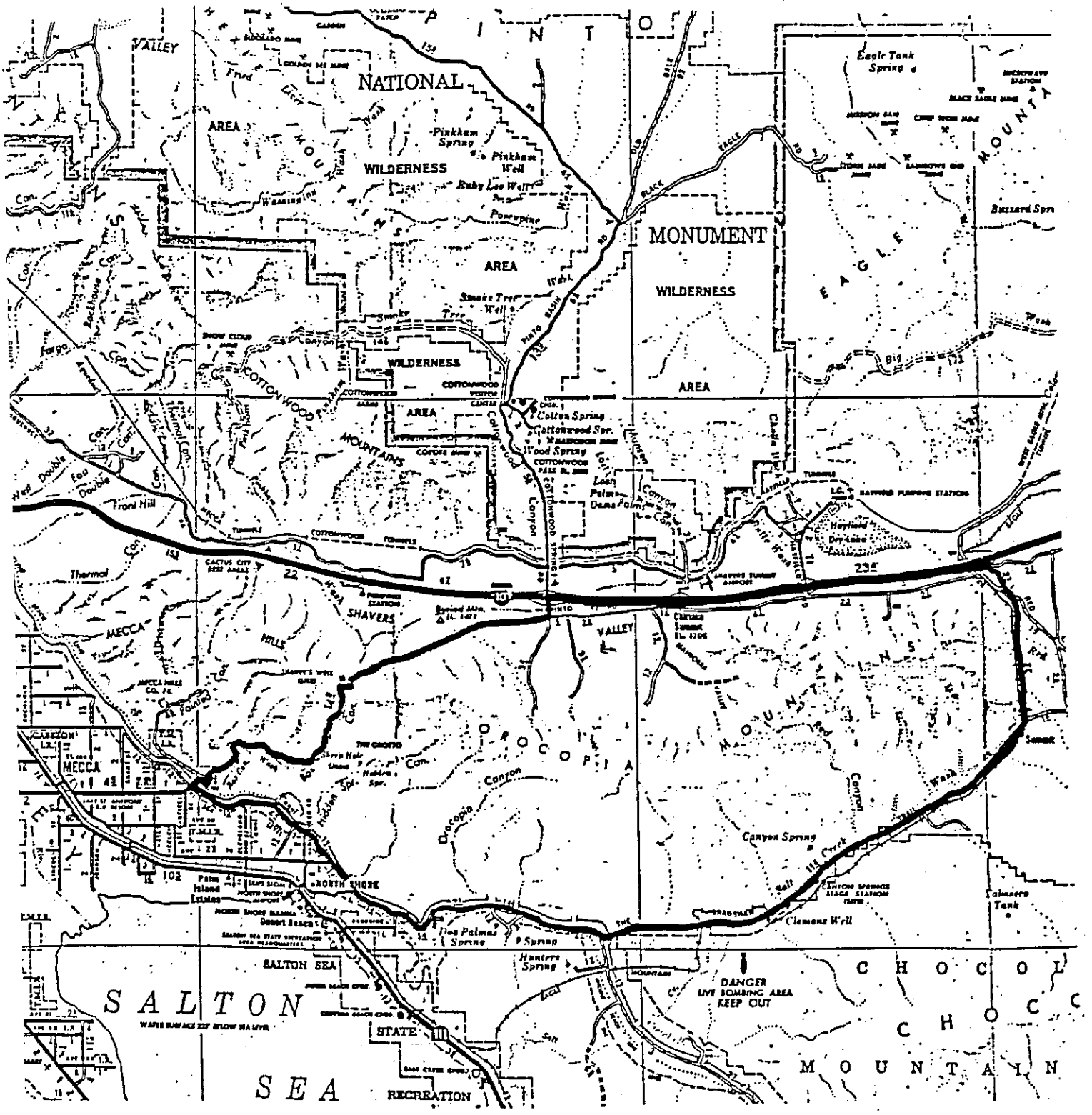


FIGURE 5
Location of the Orocopia Mountains Bighorn Sheep Management Unit,
Riverside County, California



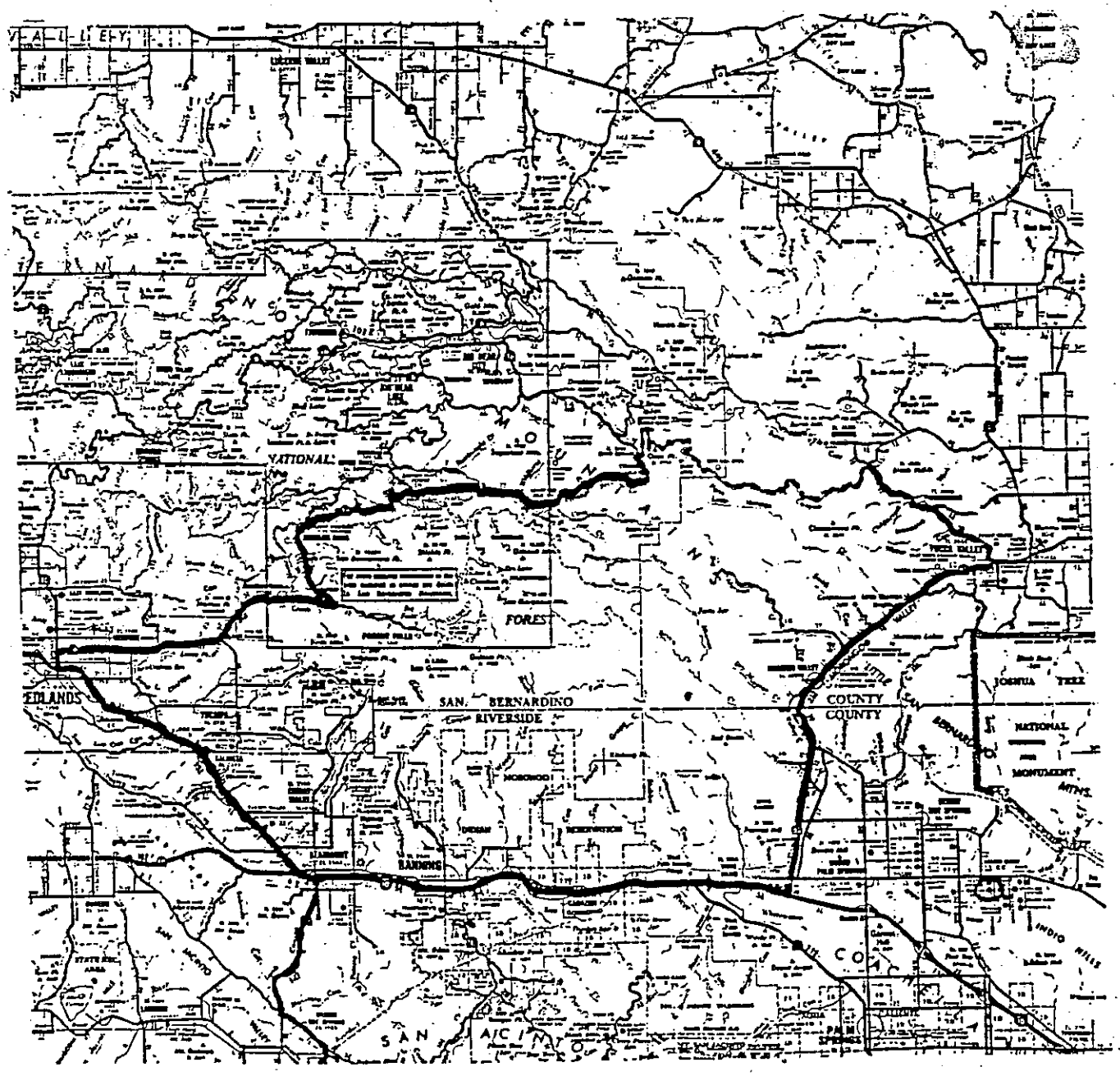
The area open for hunting for the Orocopia Mountains bighorn sheep hunt is as follows: That portion of Riverside County beginning at the intersection of Interstate Highway 10 and Cottonwood Springs Road; east on Interstate Highway 10 to the junction with Red Cloud Mine Road; south on Red Cloud Mine Road to the junction with the Eagle Mountain Mining Railroad; southwest on the Eagle Mountain Mining Railroad to the junction with the Bradshaw Trail; southwest on the Bradshaw Trail to the intersection with the Coachella Canal; west along the Coachella Canal to the junction with Box Canyon Road; northeast on Box Canyon Road to the junction with Cottonwood Springs Road; north on Cottonwood Springs Road to its intersection with Interstate Highway 10.

San Gorgonio Wilderness

The existing hunting regulations provide for limited hunting of mature, bighorn sheep rams in the Whitewater (San Gorgonio Wilderness) Management Unit, San Bernardino and Riverside counties, California. This management unit is located in the San Bernardino Mountains east of the city of San Bernardino, and northwest of Palm Springs, and is bounded on the north by Highway 18 and Highway 247, on the east by Highway 62, on the south by Interstate 10, and on the west by Interstate 215 and Interstate 15 (Figure 6).

The area open for hunting for the San Gorgonio Wilderness bighorn sheep hunt is as follows: That portion of Riverside and San Bernardino counties beginning at the intersection of Interstate Highway 10 and California State Highway 62; west on Interstate Highway 10 to the junction with California State Highway 30; north on California State Highway 30 to the junction with California State Highway 38; east and north on California State Highway 38 to the junction with Forest Service Route 1N01; east on Forest Service Route 1N01 to its joining with Pipes Road; east on Pipes Road to the junction with Pioneertown Road; southeast on Pioneertown Road to the junction with California State Highway 62; southwest on California State Highway 62 to its intersection with Interstate Highway 10.

FIGURE 6
Location of the Whitewater (San Gorgonio Wilderness)
Bighorn Sheep Management Unit,
Riverside and San Bernardino Counties, California



Sheep Hole Mountains

The existing hunting regulations provide for limited hunting of mature male bighornsheep in he Sheep Hole Mountains Bighorn Sheep Management Unit, San Bernardino County, California. The Sheep Hole Mountains are located in the Mojave Desert approximately 20 miles east of Twentynine Palms, on the north side of California State Highway 62 (Figure 7).

The area open to hunting for the Sheep Hole Mountains bighorn sheep hunt is as follows: That portion of San Bernardino County beginning at the junction of California State Highway 62 and Ironage Road; northwest on Ironage Road to intersection with Amboy Road; north on Amboy Road to intersection with National Trails Highway; east on National Trails Highway to junction with Saltus Road; southeast on Saltus Road to junction with unnamed road in Saltus that runs through Cadiz Valley; southeast on unnamed road to intersection with California State Highway 62; west on California State Highway 62 to junction with Ironage Road

White Mountains

The proposed change to the existing hunting regulations adds a new hunting area to provide for limited hunting of mature male bighorn sheep in the White Mountains Bighorn Sheep Management Unit, Mono County.

The area open to hunting for the White Mountains bighorn sheep hunt is as follows: That portion of Mono County within a line beginning at U.S. Highway 6 and the Mono-Inyo county line; northward on Highway 6 to the California-Nevada State Line; southeasterly along the California-Nevada State Line to the Mono-Inyo County Line; westward along the Mono-Inyo County Line to the point of beginning.

FIGURE 7
Location of the Sheep Hole Mountains Bighorn Sheep Management unit,
San Bernardino County

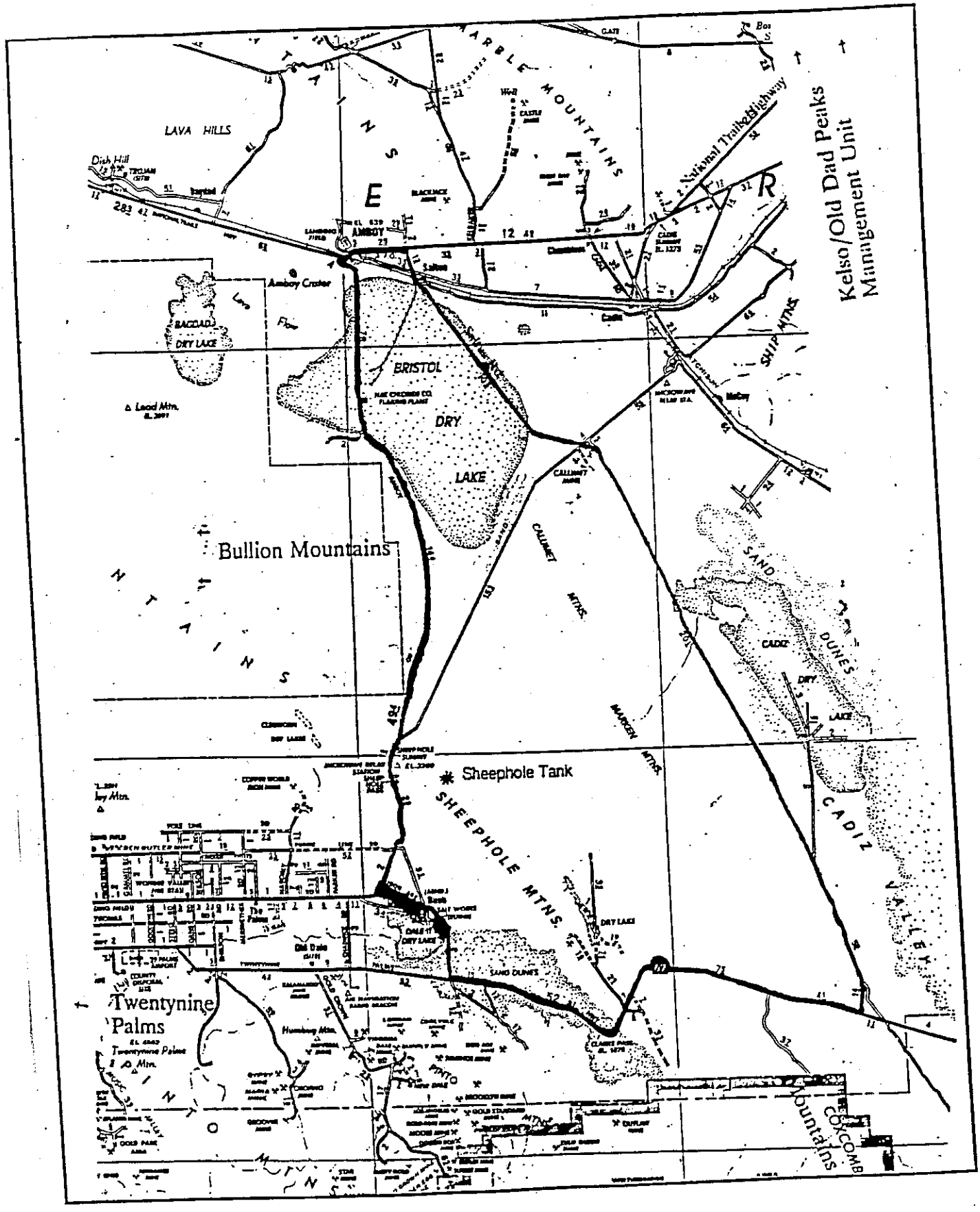
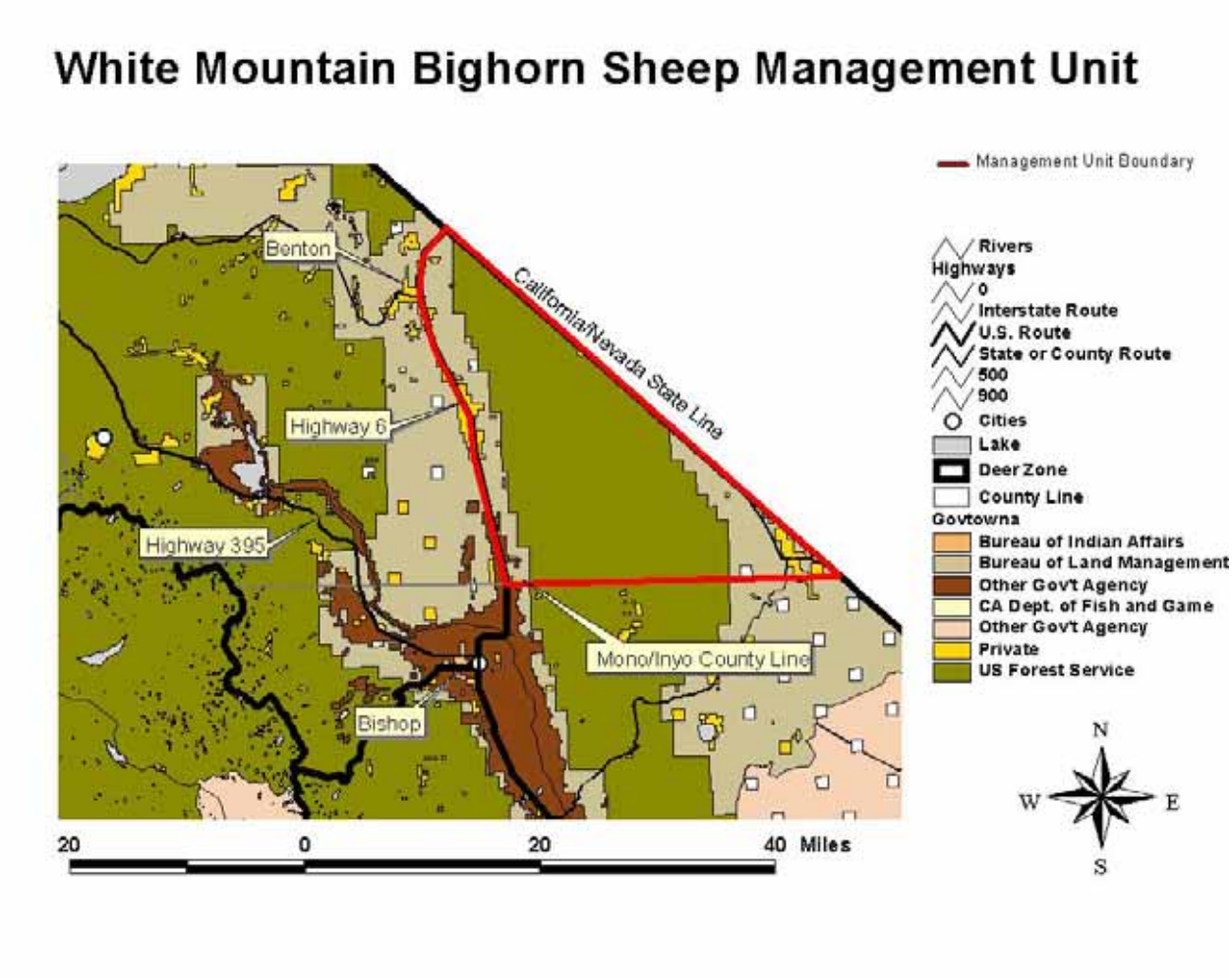


FIGURE 8
Location of the White Mountains Bighorn Sheep Management unit,
Mono County



PROJECT OBJECTIVE

The objective of the proposed action (modification of tag numbers) is to provide sport hunting opportunities for a limited number of Nelson bighorn sheep mature rams as an element of bighorn sheep management while protecting and maintaining healthy bighorn sheep populations. The Department's goals for bighorn sheep include: (1) maintain, improve, and expand bighorn sheep habitat where possible or feasible; (2) re-establish bighorn sheep populations on historic ranges where feasible; (3) increase bighorn sheep populations so that all races become numerous enough to no longer require classification as rare or fully protected; and (4) provide for aesthetic, educational, and recreational uses of bighorn sheep. These objectives are detailed in *A Plan for Bighorn Sheep in California* (California Department of Fish and Game 1983).

THE MANAGEMENT OF BIGHORN SHEEP IN CALIFORNIA

The Legislature and the people (through the initiative process) formulate the laws and policies regulating the management of fish and wildlife in California. The general wildlife conservation policy of the State is to encourage the conservation and maintenance of wildlife resources under the jurisdiction and influence of the State (Section 1801, Fish and Game Code). The policy includes several objectives, as follows:

1. To provide for the beneficial use and enjoyment of wildlife by all citizens of the State;

2. To perpetuate all species of wildlife for their intrinsic and ecological values, as well as for their direct benefits to man;

3. To provide for aesthetic, educational, and non-appropriative use of the various wildlife species;

4. To maintain diversified recreational uses of wildlife, including the sport of hunting, as proper uses of certain designated species of wildlife, subject to regulations consistent with the maintenance of healthy, viable wildlife resources, the public safety, and a quality outdoor experience;

5. To provide for economic contributions to the citizens of the State through the recognition that wildlife is a renewable resource of the land by which economic return can accrue to the citizens of the State, individually and

collectively, through regulated management. Such management shall be consistent with the maintenance of healthy and thriving wildlife resources and the public ownership status of the wildlife resource;

6. To alleviate economic losses or public health and safety problems caused by wildlife; and

7. To maintain sufficient populations of all species of wildlife and the habitat necessary to achieve the above stated objectives.

The criteria for adopting hunting regulations for game mammals require that the Commission shall consider populations, habitat, food supplies, the welfare of individual animals and other pertinent facts and testimony (Section 203.1, Fish and Game Code). This document is the basis for formally considering those factors. With respect to the welfare of individual animals, the project proposes an additional hunting tag for the Kelso Peak/Old Dad Mountains area. The methods of take are restricted to center-fired rifles, archery equipment muzzleloaders, and handguns. No dogs may be used, and potential stress to the hunted rams and other bighorn sheep in the hunt zones are minimized by virtue of the low level of hunting pressure. A detailed discussion of the effects of hunting on the populations is contained in Chapter 4.

The animals remaining in the population, both with and without hunting, are considered, since hunting is an element of management and a means potentially used to achieve objectives stated in State law contained in sections 1801 and 4900, Fish and Game Code. The removal by hunting of up to 15% of the estimated mature rams will not adversely impact reproductive potential in the populations, and the observations of hunting activities since 1987 indicate only two cases of crippling loss of a ram as a result of hunting.

Following the prescribed meetings, the Commission shall add, amend, or repeal regulations it deems necessary to preserve, properly utilize, and maintain each species or subspecies (Section 207, Fish and Game Code).

With respect to bighorn sheep, the Legislature has established the State's policy regarding management in sections 3950, 4700, 4900-4904, and 12008.5, Fish and Game Code (Appendix 1). These statutes provide the following:

1. Section 3950 defines Nelson bighorn sheep (*Ovis canadensis nelsoni*) occurring at the Marble/Clipper Mountains, Kelso Peak/Old Dad Mountains,

Clark/Kingston Mountains, Orocopia Mountains, and Whitewater (San Gorgonio Wilderness), Sheep Hole Mountains, and White Mountains management units as game mammals;

2. Section 4700 provides that bighorn sheep, with the exception of those found at the Marble Mountains, Kelso Peak/Old Dad Mountains, Clark/Kingston Mountains, Orocopia Mountains, San Gorgonio Wilderness, Sheep Hole Mountains, and White Mountains remain classified as fully protected mammals;

3. Section 4900 defines the policy of the State and provides that management shall proceed in accordance with Section 1801, Fish and Game Code (Appendix 1);

4. Section 4901 mandates management of bighorn sheep by unit and requires that the Department prepare management plans for each bighorn sheep management unit in California;

5. Section 4902 provides that the Commission may adopt all regulations necessary to provide for biologically sound management of Nelson bighorn sheep within each management unit and that the Commission may specifically authorize the hunting of mature Nelson bighorn rams found in management units for which plans have been submitted pursuant to Section 4901. Further, this section restricts the number of tags to be issued in either area to not more than 15 percent of the mature rams estimated in each area;

6. Section 4903 provides that hunting fees authorized shall be deposited in the Fish and Game Preservation Fund and shall be expended solely for purposes of the bighorn sheep program;

7. Section 4904 provides for the submission of an annual report to the State Legislature summarizing the results of annual surveys, harvest statistics, poaching incidents, and relocation efforts;

8. Assembly Bill 2848, enacted in 1990, repealed the January 1, 1993 sunset clause contained in Section 4905 and made the hunting opportunities for mature Nelson bighorn rams a permanent option; and

9. Section 12008.5 provides that the maximum penalty for taking any bighorn sheep in violation of Chapter 11 (commencing with Section 4900) is a fine of not more than $2,000 or imprisonment in the county jail for not more than one year or both the fine and imprisonment.

Historical Perspective on Bighorn Sheep Management

Bighorn sheep existing today probably are the descendants of similar animals that entered North America via the Bering land bridge during the Illinoisan glaciation, at least 150,000 years ago (Cowan 1940, Geist 1971). Wild sheep spread across the glaciated mountains of western North America during the Sangamon interglacial period. The Wisconsin glaciation, 10,000-125,000 years ago, then separated the animals into two populations that persisted in unglaciated areas. Subsequently, Dall sheep (*Ovis dalli*) evolved from populations in an Alaska-Yukon region, and bighorn sheep (*Ovis canadensis*) evolved in a region south of glaciated mountains and forests in what is now the continental United States (as summarized by Bailey 1980). Following the Wisconsin glaciation, wild sheep radiated into dry, mountainous terrain. Geist (1971) ties the evolution of Asiatic and North American sheep to the expanding availability of favorable habitat, an occurrence concomitant with receding glaciers. The four races of *Ovis canadensis* currently recognized as desert bighorn sheep evolved from wild sheep that persisted in the southern region despite climatic changes. In part, they may have persisted because of the lack of competition with other large, native herbivores (Bailey 1980).

In California, bighorn sheep are found primarily in the southeastern part of the State in numerous Mojave and Sonoran desert mountain ranges, totaling about 3,200 individuals. They also occur in five populations, totaling about 160 individuals, in the eastern Sierra Nevada; and in three populations, totaling about 300 individuals, in the Transverse Ranges of Ventura, Los Angeles, and San Bernardino counties. These estimates are based on extensive surveys conducted by the Department and cooperators (Torres et al. 1996). The probable historical and current distributions of bighorn sheep in California are illustrated in figures 7 and 8.

Three subspecies of bighorn sheep have been historically described to occur in California: *Ovis canadensis nelsoni*, found in the Transverse Ranges, throughout the Mojave Desert, and in the eastern portion of the Sonoran Desert; *O. c. cremnobates*, found in the westernmost portion of the Sonoran Desert, in western Imperial, central Riverside, and eastern San Diego counties; and *O. c. californiana*, found only in the eastern Sierra Nevada, but historically also in northeastern California. Together, individuals of these subspecies number about 3,600 animals. Their respective population estimates are as follows: *O. c. nelsoni* is the most common, numbering about 3,064; *O. c. cremnobates*, numbering about 400; and *O. c. californiana*, numbering about 160 (Torres et al. 1996).

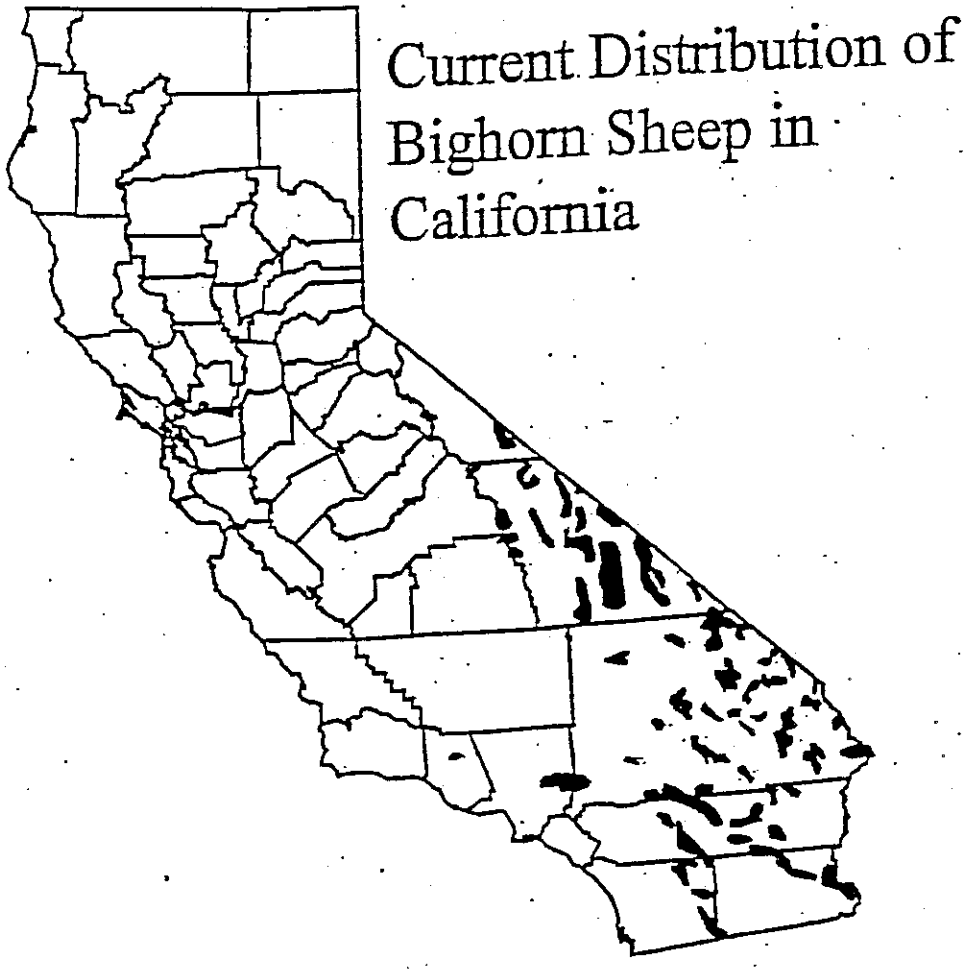
Historically, bighorn sheep were more numerous than they are today. A reasonable estimate for California is probably about 10,000 individuals in 1800. These animals were distributed among approximately 100 populations at that time. Currently, some 60 extant populations occur in California (Wehausen et al. 1987a). These populations are distributed among 50 mountain ranges. There are more populations than there are mountain ranges supporting bighorn sheep, because some larger mountain ranges contain multiple populations, based on distinct ranges of ewes. For example, during late 1989, a group of bighorn sheep was discovered at Club Peak,located in central San Bernardino County. In December 1989, one female in that group was radio-collared. Aerial telemetry flights, conducted at approximately weekly intervals during 1990, confirmed the fidelity of that female to Club Peak. She and other females and young sheep associated with her, in all probability, represent a distinct demographic unit and are treated here as such.

A downward trend in bighorn sheep numbers began with the influx of gold miners and others in about 1850. Unregulated market hunting and subsistence hunting probably were early decimating factors, but then they were followed by more significant factors: the grazing of domestic livestock (particularly domestic sheep) and the disease organisms they introduced to native bighorn sheep.

In the decades immediately following the discovery of gold in California, several populations of bighorn sheep in the Sierra Nevada were eliminated, likely as a result of diseases contracted from domestic sheep which were grazed in that mountain range. The reduction in bighorn sheep and wildlife populations in California resulted in the first legal protection for bighorn sheep and other big game species. It was believed that wildlife populations protected from hunting would flourish and recolonize former ranges. Thus, in 1872, the California Legislature passed a law protecting deer (*Odocoileus hemionus*), elk (*Cervus elaphus*), and pronghorn antelope (*Antilocapra americana*) for eight months of the year. In 1878, the Legislature further amended the act to establish a four-year moratorium on the taking of any elk, pronghorn antelope, bighorn sheep, or female deer. In 1883, the moratorium on taking bighorn sheep was extended indefinitely.

FIGURE 9
Historical Distribution of Bighorn Sheep in California

FIGURE 10
Current Distribution of Bighorn Sheep in California



Despite the good intentions of the Legislature, total protection did not stop the decline of bighorn sheep in California. Populations continued to disappear through the end of the late 1800s, prior to effective enforcement of the fully protected status (which began in about 1920). However, an aggressive translocation program conducted by the Department has resulted in bighorn sheep populations being reestablished within historic range. Historic surveys and population estimates suggest that competition for forage, diseases, and habitat changes, rather than illegal take, resulted in the elimination of bighorn sheep in some areas. The most recent example is the loss of bighorn sheep in the Lava Beds and in the Warner Mountains of Modoc County as a result of disease contracted from domestic sheep in those areas.

Modern Management of Bighorn Sheep in California

Although the Department has supported an active management program for many years, including desert water development, "modern management" of bighorn sheep began with the passage of Senate Resolution 43 in 1963. Input from interested sportsmen's groups, notably the Southern Council of Conservation Clubs and the Society for the Conservation of Bighorn Sheep, was instrumental in the passage of Senate Resolution 43. Until that time, basic inventory data consisted only of cursory statewide surveys which occurred in 1940, 1946, and 1957. This legislative action resulted in funding for the most detailed statewide bighorn sheep survey ever conducted. A field team conducted the survey over a number of years, led by Department employee Richard A. Weaver. The resulting statewide inventory, conducted from 1968-1972, yielded an estimate of 3,700 bighorn sheep in California.

More important, however, was the fact that for the first time ever the management needs of bighorn sheep, including land-use conflicts, water developments, and re-introductions, were addressed. One product of the survey was the Volunteer Desert Water and Wildlife Survey, an informal organization of volunteers founded largely as a result of a series of meetings between interested sportsmen-conservationists and the Department. The primary purpose of the survey was to help carry out recommendations for water developments put forth by Weaver et al. as a result of their work and to assist the Department with census efforts and other work related to bighorn sheep and other desert wildlife. The survey has been a success. Since 1970, volunteers have contributed thousands of hours of labor to the program, resulting in dozens of major habitat improvement projects directed specifically at increasing bighorn sheep populations (Bleich et al. 1982, Bleich 1990a).

The first effort to re-establish bighorn sheep on historical range in California occurred at Lava Beds National Monument in 1971. Bighorn sheep of the subspecies *O. c. californiana* were obtained from British Columbia and placed in an enclosure at the Lava Beds. That population grew and flourished until 1980, when a major die-off occurred as a result of domestic sheep coming into contact with them (Foreyt and Jessup 1982). Just prior to the die-off, four sheep from the Lava Beds were translocated to the Warner Mountains in an effort to establish a new population. Those sheep were supplemented later in 1980 with 10 from the Mount Baxter herd in the Sierra Nevada. That population flourished, exhibiting an average annual increase of about 24 percent until 1988, when the entire population was lost to a disease outbreak, very likely associated with direct contact between the wild sheep and domestic sheep which entered the area.

In 1979, translocation of California bighorn sheep (*O. c. californiana*) from the Mount Baxter herd in the Sierra Nevada was initiated, largely as a result of the findings of Wehausen (1979) and the recommendations of Leach et al. (1974) that the subspecies be reintroduced to areas from which it had been eliminated. Since then, a total of 103 animals have been translocated, 91 of which were used to reestablish bighorn sheep populations in three areas of the Sierra Nevada: Wheeler Crest, Mount Langley, and Lee Vining Canyon (Bleich et al. 1990a). These translocations took place in 1979, 1980, 1982, 1986, and 1988.

In 1981, Assembly Concurrent Resolution 41 was passed and directed the Department to prepare a study plan to investigate population status, competition, diseases, and reintroduction needs. Funding was allocated from the California, Environmental License Plate Fund for the purpose of carrying out the investigations outlined by the Department's study plan (Weaver 1982).

In 1983, the Department completed its statewide management plan for bighorn sheep (California Department of Fish and Game 1983). A number of specific management programs, designed to help meet statewide goals for the management and restoration of bighorn sheep populations, were contained in that plan. Goals specifically listed in the statewide plan are to: (1) maintain, improve, and expand bighorn sheep habitat where possible or feasible; (2) reestablish bighorn sheep populations on historic ranges where feasible; (3) increase bighorn sheep populations so that all races become numerous enough to no longer require classification as threatened or fully protected; and (4) provide for aesthetic, educational, and recreational uses of bighorn sheep. Aside from the specific recommendations of Leach et al. (1974) regarding California bighorn sheep,

this was the first official Department document to advocate the reintroduction of all subspecies of bighorn sheep in California.

Subsequently, in 1983 a series of translocation projects involving Nelson bighorn sheep (*O. c. nelsoni*) from two large Mojave Desert mountain ranges began. To date, 222 animals have been removed from Old Dad Peak for translocation to the Whipple Mountains, Sheep Hole Mountains, Eagle Crags, Argus Mountains, Avawatz Mountains, Chuckwalla Mountains, Bristol Mountains, and Bullion Mountains. A total of 55 animals have been removed from the Marble Mountains for translocation to the Whipple Mountains and Eagle Crags (Bleich et al. 1990a, Torres et al. 1994a).

By 1983, it was determined that the population of Nelson bighorn sheep in the San Gabriel Mountains was large enough to support removals for translocation (Holl and Bleich 1983), and in 1983, 1985, and 1987, a total of 71 animals were removed from winter ranges in the South Fork of Lytle Creek and Cattle Canyon. Those animals were translocated to a vacant, historical winter range in the Prairie Fork of the San Gabriel River (within the San Gabriel Mountains) and to historical habitat near San Rafael Peak, in Ventura County (Bleich et al. 1990a). In 1988, 10 sheep were captured in Lone Tree Canyon of the White Mountains, Mono County, and translocated to Silver Canyon, also in the White Mountains, Inyo County. Since 1979, the Department has reestablished 11 new populations and augmented four small populations through translocation projects.

In 1986, the enactment of Assembly Bill 3117 (Chapter 745) created a series of laws which comprised the most significant legislation affecting bighorn sheep management in California since the 1878 legislation which established the initial moratorium on the taking of bighorn sheep. This law contained language which directed the Department to prepare management plans for each population of bighorn sheep in California.

Assembly Bill 3117 (Chapter 745) differed from previously proposed legislation which would have authorized hunting in that it: (1) made bighorn sheep a game mammal in only two areas (Old Dad Peak and the Marble Mountains); (2) provided for one hunting tag to be available for fund-raising purposes each year, with the revenues from bighorn sheep hunting to be put in an account set aside solely for the benefit of bighorn sheep; (3) set a biologically conservative limit on the number of tags which could be offered each year, not to exceed 15 percent of the mature

rams counted annually in each population; and (4) contained an expiration date of December 31, 1992, unless the Legislature extended it beyond that date. In 1990, the Legislature removed the expiration date.

The implementation of Section 4902, Fish and Game Code (Appendix 1), included hunting of a limited number of mature Nelson bighorn rams since 1987. In 1987, specific regulations similar to the proposed action were initially adopted by the Commission. Hunts were also annually conducted in 1988 through 1996, pursuant to Section 362, Title 14, CCR. This hunting program was added as an element of the Department's bighorn sheep management program.

Assembly Bill 977 amended sections 4902 and 4903, Fish and Game Code. This bill modified the previous code by: (1) permitting the Commission to authorize hunting of Nelson bighorn rams in management units for which plans have been developed pursuant to Section 4901, Fish and Game Code; (2) increasing to three the permissible number of fund-raising license tags to be available for programs and projects to benefit bighorn sheep (the number of these authorized, if more than one, would not be permitted to exceed 15 percent of the total number of tags authorized generally); and (3) specifying that any use of these revenues for the Department's administrative overhead shall be limited to the reasonable costs associated with direct administration of the program.

The Department's Bighorn Sheep Management Program is currently developing bighorn sheep metapopulation plans that will inventory and evaluate the population status of all bighorn sheep populations/sub-populations within the State. This planning effort will identify and prioritize management activities to ensure the long-term viability of bighorn sheep populations. Protection of important habitats and inter-mountain movement corridors, identification of future reintroduction sites, and the maintenance, improvement, and development of guzzlers will be addressed. This planning will occur in cooperation with the BLM, CDPR (California Division of Parks and Recreation), Department of Defense (Military), and National Park Service (NPS).

Intensive data collection is continuing to provide basic information for updating and preparing additional management plans. These efforts include assessing habitat and potential movement corridors, and surveys to estimate population sizes, age class structure, sex ratios, as well as sampling individual animals for the prevalence of diseases and parasites.

Prior to authorizing any hunting of bighorn sheep, the Commission was required to take into account the Nelson bighorn sheep population statewide. Finally, the Commission was precluded from adopting any regulations authorizing hunting in a single year of more than 15 percent of the mature Nelson bighorn rams in the aforementioned management units, as determined by an annual population estimate conducted in each management unit. The Department was also required to provide an annual report to the Legislature detailing bighorn sheep management activities and harvests during the preceding year.

The conservation and management of California's bighorn sheep resource will rely on adequate and stable funding commitments. This revenue will be required to offset costs associated with insuring the long-term survival and persistence of bighorn sheep populations. The revenue generated through the bighorn sheep hunting program is summarized in Table 2-1. To date (1987-2004), the funds provided by this hunting program have been substantial and totaled $2,288,635.75. As specified in Section 4903, Fish and Game Code, these funds must be dedicated to programs and projects to benefit bighorn sheep in California.

The wildlife values associated with the persistence of these populations, such as viewing and knowledge of existence, are greatly appreciated, but not easily quantified. Although, these uses do not directly provide funds for bighorn sheep management, the Department recognizes their importance toward successful bighorn sheep management. Public knowledge of the status of bighorn sheep populations can help support important management efforts for the maintenance, enhancement, and recovery of bighorn sheep populations.

TABLE 2-1
California Bighorn Sheep
Management Program Revenue

Year	# Tags Allocated	# Total Applicants	Fund-Raising Tag Revenue	Drawing Tag License Fees	Total Revenue
1987	9	4,066	$ 70,000.00	$ 21,930.00	$ 91,930.00
1988	9	3,385	$ 59,000.00	$ 18,525.00	$ 77,525.00
1989	9	3,185	$ 40,000.00	$ 17,525.00	$ 57,525.00
1990	6	2,591	$ 37,000.00	$ 13,955.00	$ 50,955.00
1991	8	2,834	$ 42,000.00	$ 15,570.00	$ 57,570.00
1992	12	3,798	$ 61,000.00	$ 22,464.50	$ 83,464.50
1993	11	4,318	$100,000.00	$ 25,082.00	$125,082.00
1994	14	4,692	$162,000.00	$ 28,422.00	$190,422.00
1995	16	4,217	$187,000.00	$26,312.00	$213,312.00
1996	14	4,493	$193,500.00	$28,702.75	$222,202.75
1997	11	3,925	$84,000.00	$26,836.25	$110,836.25
1998	10	4,853	$150,000.00	$32,588.00	$182,588.00
1999	11	5,058	$95,000.00	$34,120.00	$129,120.00
2000	10	5,445	$76,000.00	$36,288.00	$112,288.00
2001	14	5,754	$148,000.00	$40,539.00	$188,539.00
2002	14	7,147	$138,000.00	$51,485.25	$189,485.25
2003	10	7,697	$51,691.00	$54,679.75	$106,370.50
2004	13	7,285	$58,884.50	$40,536.00	$99,420.50
Total	**201**	**84,743**	**$1,753,075.50**	**$535,550.50**	**$2,288,635.75**

INTENDED USE OF ENVIRONMENTAL DOCUMENT

This environmental document has been prepared to assess the potential impacts of adding a new bighorn hunting zone in the White Mountains and changing the number of tags for hunting of bighorn sheep in California. It has been prepared pursuant to CEQA (Section 21080.5, Public Resource Code) and the CEQA Guidelines (Section 15250,

Title 14, CCR). The environmental document is an informational item to aid the Commission in the decision-making process and to inform the public of the potential effects of the proposed action of hunting bighorn sheep. The analysis of the proposed project and the alternatives to the proposed project will address issues such as illegal kill of bighorn sheep, habitat loss, and other related factors.

Analysis of future bighorn sheep hunting projects may refer to and incorporate by reference information contained in this document. Future proposed bighorn sheep hunting regulations may not involve the preparation of environmental documents similar to this, but may include updates to this environmental document. If substantial changes occur in the project itself or in the environmental conditions affected by the regulations, a supplemental or subsequent environmental document would be prepared. Wildlife Alive et al. v. Chickering et al. (1976) 18 Cal.3d 190 [132 Cal. Rptr. 377, 553 P.2d 537].

THE FUNCTIONAL EQUIVALENT

CEQA requires all public agencies in the State to evaluate the environmental impacts of projects that they approve or carry out that may have a potential to significantly impact the environment. Most agencies satisfy this requirement by preparing an environmental impact report (EIR) or negative declaration (ND). However, an alternative to the EIR/ND requirement has been created for State agencies whose activities include the protection of the environment within their regulatory programs. Under this alternative, an agency may request certification of its regulatory program from the Secretary for Resources, after which the agency may prepare functionally equivalent environmental documents in lieu of EIRs and NDs.

The regulatory program of the Commission has been certified by the Secretary for Resources, and the Commission is eligible to submit this environmental document in lieu of an EIR or ND (Section 15252, CEQA Guidelines).

This environmental document contains a description of the proposed action, reasonable alternatives to the proposal, cumulative impacts, and a discussion of the alternatives. In addition, it considers relevant policies of the Legislature and Commission. These standards are contained in Section 781.5, Title 14, CCR. This environmental document presents information to allow a comparison of the potential effects of various levels of hunting. Although an alternative may not achieve the project's objectives, it is

considered to provide the Commission and the public with additional information related to the options available. Both hunting and nonhunting alternatives are considered.

CHAPTER 3. ENVIRONMENTAL SETTING OF THE PROJECT

MARBLE/CLIPPER MOUNTAINS

The Marble Mountains are about 30 kilometers (18 miles) long, two to eight kilometers (one to five miles) wide, and oriented along a northwest/southeast axis. The west-facing slope is topographically more diverse than the eastern slope and consists largely of a steep scarp; the eastern slope is much less rugged. Elevations range from approximately 300 meters (984 feet) in the southwest portion of the unit to 1,171 meters (3,942 feet) at the highest point. The mountain range contains approximately 78 square kilometers (29 square miles) of habitat regularly occupied by bighorn sheep. The Clipper Mountains are oriented on a northeast/southwest axis. Elevations range from approximately 415 m (1362 feet) at Danby, on the southern edge of the management unit, to 1404 m (4607 feet) at the highest point in the Clipper Mountains. Desert bighorns occur throughout the Clipper Mountains, occupying approximately 85 square kilometers (33 square miles) of habitat within the unit.

The Marble and Clipper Mountains are largely volcanic, but with steep, sedimentary limestone cliffs predominant at the south end of the ranges. Daytime temperatures in summer frequently exceed 38 degrees Celsius (100 degrees Fahrenheit), and temperatures below freezing are not uncommon in winter (Freiwald 1984). Precipitation in the vicinity of the Marble Mountains averages ten centimeters (4.5 inches) annually, with about half of it falling as summer showers (Freiwald 1984). Approximately 75 percent of these areas are in public ownership, administered by BLM. Most of the remainder of the area is owned by the Southern Pacific Land Company.

Habitats within this area have been described by Bleich et al. (1987a). They are typical of the Mojave Desert and consist largely of desert scrub and desert wash communities (Mayer and Laudenslayer 1988). Creosote bush (*Larrea tridentata*) is abundant in the desert scrub habitat, and the desert wash habitat supports vast stands of smoketree (*Dalea spinosa*) (Paysen et al. 1980). Other common shrubs include white brittle bush (*Encelia farinosa*), ragweed (*Ambrosia dumosa*), Ephedra (*Ephedra spp.*), and catclaw (*Acacia greggii*). There are three natural sources of water within the Marble Mountains range, and all of them have been developed to some extent to provide dependable flows of water for various wildlife species. Additionally, two artificial catchments have been constructed in an effort to provide dependable sources of water in

those areas of the range containing no natural sources.

In the Clipper Mountains, two artificial water catchments (big game guzzlers) have been constructed to date, and 3 springs have been developed or improved for use by bighorn sheep and other wildlife. These sources provide permanent water, except in very dry years. Three other springs provide water for other wildlife in all but the driest years.

A search of the California Natural Diversity Data Base (CNDDB) yielded records of several species of special concern that occur within the management unit. The desert tortoise [*Xerobates (Gopherus) agassizi*], a federally and State-listed threatened species, occurs on the alluvial plains surrounding the Marble Mountains. Additionally, one plant, the Orocopia sage (*Salvia greatae*), a candidate 2 species for Federal listing, has been recorded in the Marble Mountains. Appendix 3 lists plant and animal species occurring in this area which are classified as threatened or endangered or are proposed to be listed by the Federal and/or State governments.

Bighorn sheep are found throughout the Marble and Clipper Mountains. Both sexes move freely within each range, according to aerial locations of telemetered individuals (V. C. Bleich and A. M. Pauli, unpublished data). Ewes with young lambs frequent the more precipitous interior portions of the ranges from March through May. Movements of bighorn rams between the Clipper Mountains and the Marble Mountains occur frequently (V. C. Bleich, A. M. Pauli, and S. G. Torres, unpublished data). Intermountain movements are made most frequently by rams, although such movements by mixed groups and by ewes do occur (Schwartz et al. 1986, Bleich et al. 1990, Bleich et al. 1996).

As discussed by Bleich et al. (1987a), range conditions in this area vary from year to year, from season to season, and from area to area, even within the unit. Range conditions within the unit are as good as can be expected, considering the aridity of the climate. As expected, total annual and winter/spring rainfall patterns have been variable. Annual rainfall has been good from 1990 through the present. However, 1994, 1996, and 2000 rainfall was lower than average. Rainfall in 2001 was higher than average. These rainfall patterns are determined by accessing the Mitchell Caverns Weather Station in the Providence Mountains, San Bernardino County, from the Western Regional Climate Center. Although no weather stations or official rain gauges are maintained in the Marble Mountains hunt zone, Department field biologists, researchers, and wardens with

experience in the area were the sources of this information (Vernon C. Bleich, Department of Fish and Game, 407 West Line Street, Bishop, California). Any higher than normal winter/spring rainfall results in a corresponding increase in the volume and quality of forage available to bighorn sheep. Improved forage conditions tend to improve the physical condition of individual sheep and increase the potential for successful reproduction and survival of lambs.

In 1989, the Commission designated that portion of the Marble Mountains Bighorn Sheep Management Unit which is open to hunting as the Marble Mountains Wildlife Area. This area was designated in cooperation with the BLM in an effort to provide for the safe and orderly conduct of the bighorn sheep hunting season and as a formal step toward insuring land management planning to benefit bighorn sheep. This designation was intended to clarify the resource management agencies' emphasis on bighorn sheep inhabiting the areas. The BLM, in cooperation with the Department, has prepared a habitat management plan for the Marble Mountains (BLM 1989a). Those regulations pertaining to the administration of the Marble Mountains Wildlife Area are contained in Section 550, Title 14, CCR (Appendix 3).

Few, if any, feral animals are present, and existing human impacts to the habitat are quite limited. Feral burros (*Equus asinus*) occasionally enter this area. However, numbers presently are very low, and it appears likely that immigration will continue to be very low. Management efforts should strive to prevent establishment of a population, as called for in the BLM California Desert Conservation Area Plan (Bureau of Land Management 1980). In 1994, a legislative act entitled "California Desert Protection Act of 1994" (S. 21) passed Congress and designated wilderness areas and wilderness study areas to be administered by the BLM. This act also established the Mojave National Preserve, and Joshua Tree and Death Valley national parks to be administered by the NPS. Administrative boundaries have been delineated by the respective agencies. Within the Marble Mountains, administrative boundaries under management of the BLM have been modified and published. Most of this region is now designated wilderness. As a result, few impacts to the habitat are expected to occur in the foreseeable future, and it will be protected from development in perpetuity or until Congress determines that other values exceed those associated with the wilderness classification. Wilderness designation is, however, a double-edged sword, and complicates efforts to conserve wildlife in areas designated as such (Bleich 1999, 2000) by making it difficult to implement habitat enhancement projects or to capture wildlife for purposes of research or

translocation.

KELSO PEAK/OLD DAD MOUNTAINS

Old Dad Peak is primarily a limestone mass (Dunne 1977). Soils in the vicinity of Kelso Peak and the Marl Mountains are largely granitic (Curry and Reseigh 1981). Elevations within the management unit range from 1,663 meters (5,155 feet) near Cima Dome in the east to 387 meters (1,200 feet) in the southwest portion of the management unit. Other major peaks within the management unit include Wildcat Butte, Club Peak, Kelso Peak, and Old Dad Peak.

Weather conditions in the management unit are typical of the Mojave Desert. Daytime high temperatures in summer frequently exceed 38 degrees Celsius (100 degrees Fahrenheit), and temperatures below freezing in winter are not uncommon (Weaver et al. 1969). Precipitation in the vicinity of the management unit averages eight centimeters (3.2 inches) annually, with about half of it falling as summer thunder showers (Freiwald 1984). Summer thunder showers are extremely localized within the management unit and even within a specific mountain range at times. The management unit contains approximately 215,000 hectares (530,000 acres), of which approximately 17,200 hectares (42,500 acres) receive the majority of use by bighorn sheep.

Vegetation communities in the management unit are typical of those occurring in the Mojave Desert. Prevalent communities are largely the desert scrub and desert wash communities (Mayer and Laudenslayer 1988). Creosote bush scrub and Joshua tree woodland predominate in desert scrub, and smoketree and catclaw dominate in desert wash habitats (Paysen et al. 1980). According to Crosley and Moody (1980), creosote bush, ragweed, desert trumpet, ephedra, brittle bush, boxthorn, and yucca are the dominant plant species in the management unit.

Water sources are limited in the area. Four artificial water catchments have been constructed especially for bighorn sheep, and they provide permanent water, except in very dry years. Several undeveloped springs provide occasional flows, depending on annual precipitation, and one developed spring provides a permanent water supply. Several stock tanks, to which local ranchers haul water, are located within the management unit. The Department has committed to maintaining the water sources to

meet the needs of bighorn sheep.

A search of the CNDDB yielded records of several species of special concern that occur within the management unit. The desert tortoise [*Xerobates (Gopherus) agassizi*], a federally and State-listed threatened species, occurs on the alluvial plain and foothill areas throughout the management unit. Swainson's hawk (*Buteo swainsoni*), a State-listed threatened species, is reported in the management unit as a migrant; it is not known to nest within the hunt zone. The least Bell's vireo (*Vireo bellii pusillus*), a federally and State-listed endangered species, has been reported in the area surrounding the hunt zone. However, suitable habitat for this species does not occur within the hunt zone. The Cima milk vetch (*Astragalus cimae*) is a Federal candidate 3c species; as such, the species is widespread and/or not threatened (Smith 1984). Indeed, this species is found throughout much of the eastern Mojave Desert, based on records provided by Smith (1984).

Appendix 2 lists plants and animals occurring in the Kelso Peak/Old Dad Mountains Management Unit which are threatened or endangered or are proposed to be listed by the Federal and/or State governments.

Within the management unit, bighorn sheep occur in the western portion of Old Dad Peak (labeled Old Dad Mountain on some maps), at Kelso Peak and in the Marl Mountains. The steepest, most rugged terrain is found at Old Dad Peak and is used primarily by ewes and lambs. The Kelso Mountains, Marl Mountains, and the hills immediately to the east of Old Dad Peak are heavily used by rams, but ewes and lambs do use them during certain times of the year (Bleich et al. 1997).

Range conditions in the management unit are quite variable from year to year, from season to season, and from area to area. Current management plans for the three BLM cattle allotments that include parts of the management unit rate the general range condition as good, with a stable-to-improving trend (Sorensen 1982, 1983, 1984). Bleich (1986) rated recent range conditions as excellent, resulting from several years of above-average precipitation. As expected, total annual and winter/spring rainfall patterns have been variable. Annual rainfall has been good from 1990 through 2002. However, 1994, 1996, and 2000 rainfall was lower than average. Rainfall in 2001 was higher than average. These rainfall patterns are determined by accessing the Mitchell Caverns Weather Station in the Providence Mountains, San Bernardino County, from the Western

Regional Climate Center. Although no weather stations or official rain gauges are maintained in the Kelso Peak/Old Dad Mountains hunt zone, Department field biologists, researchers, and wardens with experience in the area were the sources of the information (Vernon C. Bleich, Department of Fish and Game, 407 West Line Street, Bishop, California). Any higher than normal winter/spring rainfall should produce a corresponding increase in the volume and quality of forage available to bighorn sheep. Improved forage conditions tend to improve the physical condition of individual sheep and increase the potential for successful reproduction and survival of lambs, as observed in our fall surveys.

Portions of the Kessler Springs, Valley View, and Granite Mountains cattle allotments formerly extended into the management unit. Weaver et al. (1969) suggested that competition between cattle and bighorn sheep appeared to be limited in the late 1960s in the eastern Mojave Desert, because cattle, at that time, mostly ranged at lower elevations than bighorn. Recent telemetry work (Bleich et al. 1997) ineicates that bighorn sheep range into lower elevations on a more regular basis than suggested by Weaver et al. (1969). Thus, the potential for competition likely has been reduced substantially by the elimination of the majority of cattle grazing within the management unit. There is no indication at this time that competition, in the sense that a resource is being usurped by one species to the detriment of the other, is occurring (Wehausen 1990).

Weaver et al. (1969) noted severe "competition" in the late 1960s between bighorn sheep and feral burros throughout much of the eastern Mojave Desert. They did not specifically discuss that portion of the desert within the management unit. Currently, relatively few feral burros occur within that area.

In 1989, the Commission designated that portion of the Kelso Peak and Old Dad Mountains Bighorn Sheep Management Unit which is open to hunting as the Kelso Peak and Old Dad Mountains Wildlife Area. This area was designated in cooperation with the BLM in an effort to provide for the safe and orderly conduct of the bighorn sheep hunting season and as a formal step toward insuring land management planning to benefit bighorn sheep. The BLM, in cooperation with the Department, has prepared a habitat management plan for the management unit (BLM 1989b). Those regulations pertaining to the administration of the Kelso Peak/Old Dad Mountains Wildlife Area are contained in Section 550, Title 14, CCR (Appendix 3).

In 1994, a legislative act entitled "California Desert Protection Act of 1994" (S. 21) passed Congress and designated wilderness areas and wilderness study areas to be administered by the BLM. This act also established the Mojave National Preserve, and Joshua Tree and Death Valley national parks to be administered by the NPS. This management unit occurs entirely within the boundaries of Mojave National Preserve, and level of cattle grazing and the population of donkeys within that area both have been reduced. The majority of it has been classified as wilderness. Few, if any, impacts to the habitat that would negatively influence bighorn sheep are likely to occur in the foreseeable future. Areas designated as wilderness will have the habitat within them protected in perpetuity or until Congress determines that other values exceed those associated with wilderness classification. Nonetheless, wilderness designation is, a double-edged sword, and complicates efforts to conserve wildlife in areas designated as such by making it difficult to implement habitat enhancement projects or to capture wildlife for purposes of research or translocation; the difficulty of implementing such projects is exacerbated by administration of the area as a unit of the National Park Service (Bleich 1999, 2000).

CLARK/KINGSTON MOUNTAIN RANGES

The Clark and Kingston management units have been combined to form a single larger management unit or hunt zone. This consolidation was motivated by the fact that a subpopulation of ewes from the Kingston Range spends the winter and lambing season in the Mesquite Mountains, which is in the Clark Management Unit (Jaeger and Bleich 1991, Jaeger 1994). Therefore, this proposed hunt zone has two populations of bighorn sheep.

The Clark Mountain Range follows a northeast/southwest axis. The southwestern half of the range is more diverse topographically than the northeastern half; it has steep scarps along the higher ridges. Elevations range from approximately 975 meters (3,200 feet) in the northwestern portion of the unit to 2,417 meters (7,929 feet) at the top of Clark Mountain. Geologically, the Clark Mountain Range consists largely of structurally complex regions of faulted precambrian and paleozoic formations. Area basement rocks consist of precambrian, granitic, and biotite gneiss that have been intruded locally by alaskite and pegmatite dikes of similar age (Sergent and Beckwith 1985). The Kingston Mountain Range runs on a northwest/southeast axis. Elevations range from 2,232 meters (7,323 feet) at the highest point at Kingston Peak to a low of 640 meters (2,100 feet) near Kingston Wash in the southern portion of the area. Geologically, the Kingston

Mountain area basement rocks consist of rhyolitic and granite intrusions or uplifts through limestone formations (Vernoy and Craig 1959).

Weather conditions in the Clark and Kingston Mountains are typical of the Mojave Desert. Daytime high temperatures in summer frequently exceed 38 degrees Celsius (100 degrees Fahrenheit). In winter, temperatures below freezing are not uncommon (U.S. Weather Service records). Annual precipitation in the Clark and Kingston mountain ranges in recent years have averaged 28.7 centimeters (11.3 inches). Snow is common in winter (U.S. Weather Service records).

The Clark Mountain Range supports relatively rich vegetation, compared to other Mojave Desert mountain ranges. The flora includes many species from the Great Basin and other southwestern deserts not reported elsewhere in California. A total of 407 species, representing 64 families of vascular plants, has been reported for the Clark Mountain Range. Prigge (1975) described eight plant communities in the Clark Mountain Range: white fir-pinyon forest, pinyon-juniper woodland, blackbrush scrub, Joshua tree woodland, creosote bush scrub, desert wash scrub, anomalous desert scrub, and seeps and springs. Thorne et al. (1981) described three additional communities as mixed desert scrub, desert calcicolous scrub, and gypsicolous scrub. The Kingston Mountain Range has a relatively rich flora present from the transition through the lower sonoran life zones. Species range from white fir, pinon, juniper, and bitterbrush at the higher elevations to burrobush, Creosote bush, and cacti at the lower elevations (Vernoy and Craig 1959).

No species of plant listed as threatened or endangered by either the Federal or State occurs within the Clark/Kingston Mountains. Rusby's desert mallow (*Sphaeralcea rusbyi eremicola*) occurs in the Clark Mountains, is currently listed as sensitive by BLM, and is a candidate for listing as threatened or endangered by the USFWS (1983). Plants of limited abundance and distribution within the Clark Mountains include Clark Mountain agave (*Agave utahensis floccosum*), Clark Mountain buckwheat (*Eriogonum heermannii floccosum*), and striped horsebush (*Tetradymia argyraea*). Three BLM sensitive plants occur in the Kingston Range area: Death Valley beard-tongue (*Penstemon fruticiformis amargosae*), scaly sand plant (*Penstemon stephensii*), and Kingston Mountain cinquefoil (*Polentilla patelifera*).

Water sources on the Clark Mountains include 10 natural springs, all in the southwestern part of the range. In addition, two big game guzzlers have been

constructed by the Department's volunteers. Water sources in the Kingston Mountains occur in the form of natural tanks at higher locations and provide water for extended periods after the rain. Additionally, there are four major springs in the middle of the range and three springs located south of the main mountain mass. Two artificial water catchments have been constructed by the Department.

The areas normally utilized by bighorn sheep within the Clark/Kingston Mountains are illustrated in Figure 4. Within the Clark Mountains, bighorn sheep occur in eastern and western subpopulations, separated by Keany Pass. Bighorn sheep in the eastern portion of the range move back and forth at will between the Spring Mountains in Nevada and the Clark Mountain Range in California (Jaeger 1994). Within the Kingston Mountains, mountain sheep are well distributed within the main mountain mass, and several movements into the Mesquite Mountains have been recorded.

Range conditions in these desert habitats are quite variable from year to year, season to season, and area to area. Range conditions in the Clark/Kingston Mountains currently are good (Vernoy and Bleich 1991, 1992). Conditions can be expected to remain good with sound range management practices and normal weather conditions. As expected, total annual and winter/spring rainfall patterns have been variable. Annual rainfall has been good from 1990 through 2002. However, 1994, 1996, and 2000 rainfall was lower than average. Rainfall in 2001 and 2004was higher than average. These rainfall patterns are determined by accessing the Mitchell Caverns Weather Station in the Providence Mountains, San Bernardino County, from the Western Regional Climate Center. Although no weather stations or official rain gauges are maintained in the Clark/Kingston Mountains hunt zone, Department field biologists, researchers, and wardens with experience in the area were the sources of the information (Vernon C. Bleich, Department of Fish and Game, 407 West Line Street, Bishop, California). Any higher than normal winter/spring rainfall should produce a corresponding increase in the volume and quality of forage available to bighorn sheep. As stated previously, improved forage conditions tend to improve the physical condition and survival of bighorn sheep, as observed in our fall surveys.

There are two BLM livestock grazing allotments in the Clark Mountains, the Clark Mountain Allotment and the Valley Wells Allotment. Allotment management plans have been prepared for both (BLM 1983, 1984). The Kingston Mountains contain two grazing allotments, the Horse Thief Spring and Valley Wells grazing allotments.

Planned BLM management actions for each allotment include steps to minimize or eliminate conflicts between livestock and wildlife for use of water sources, and proposals to assess the effects of livestock grazing on bighorn sheep.

The Clark Mountain Wild Horse and Burro Herd Management Area (HMA) lies within this bighorn sheep management unit. It includes approximately 55,443 hectares (137,000 acres), and is administered, in part, by the BLM. No wild horses have been found within this HMA. In 1994, a legislative act entitled "California Desert Protection Act of 1994" (S. 21) passed Congress and designated wilderness areas and wilderness study areas to be administered by the BLM. This act also established the Mojave National Preserve, and Joshua Tree and Death Valley national parks to be administered by the NPS.

The Clark Mountain range is within the boundaries of the Mojave National Preserve. As such, much this area is now administered by the NPS as wilderness. The Kingston and Mesquite mountains remain administered by the BLM. Within these management units, new administrative boundaries will be established by the BLM and NPS. Few, if any, impacts to the habitat that would influence bighorn sheep are likely to occur in the foreseeable future. Areas now designated as wilderness will have the habitat within them protected in perpetuity or until Congress determines that other values exceed those associated with wilderness classification. Nonetheless, wilderness designation is a double-edged sword, and complicates efforts to conserve wildlife in areas designated as such by making it difficult to implement habitat enhancement projects or to capture wildlife for purposes of research or translocation; the difficulty of implementing such projects is exacerbated by administration of the area as a unit of the National Park Service (Bleich 1999, 2000).

OROCOPIA MOUNTAINS

The Orocopia Mountains are located east of Indio in south-central Riverside County. This area is bordered by the Coachella Canal on the west and southwest, the Bradshaw Trail on the south, and by Interstate Highway 10 on the north. Gas Line Road is the eastern border, and it is the western border of the adjacent Chuckwalla Mountains Bighorn Sheep Management Unit. The nearest community is Chiriaco Summit, on the north along Interstate Highway 10.

The Orocopia Mountains lie on an east/west axis approximately 30 kilometers in length and 11 to 18 kilometers wide. This area has many steep canyons, ravines, and low rolling hills leading to large washes. Elevations vary from sea level (southern boundary near Coachella Canal) to 1,163 meters (3,815 feet) at Orocopia Peak. The major drainages are located on the southern portion of the mountain and include Orocopia and Red canyons, and Salt Creek Wash.

Weather conditions are typical of the northern Sonoran Desert. Temperatures exceeding 40 degrees Celsius (104 degrees Fahrenheit) are not uncommon on summer days, and temperatures in winter may drop below freezing at night. Precipitation in the vicinity averages about nine centimeters (3.5 inches) per year, and is divided between Pacific fronts in the winter, and summer thundershowers. Precipitation in these desert mountain areas is highly variable from year to year and may be distributed very unevenly.

Vegetation in this management unit is typical of northern Sonoran Desert, and lies in a transition zone between the Mojave and Sonoran deserts. Desert scrub and desert wash are the dominant habitats (Mayer and Laudenslayer 1988). Dominant plants include creosote bush (*Larrea tridentata*), desert ironwood (*Olneya tesota*), and paloverde (*Cerdidium spp.*). A query of the most recent update of the CNDDB indicates that there are no species of vegetation present in the unit that are listed as threatened or endangered by the Federal and/or State governments. Orocopia sage (*Salvia greatae*), a candidate 2 species for Federal listing, has been recorded in the Orocopia Mountains.

A query of the CNDDB indicated only one bird and one reptile considered to be either threatened or endangered by the Federal and/or State governments. The Yuma clapper rail is reported in the vicinity of nearby riparian areas, but is not known to occur in the desert riparian washes. The desert tortoise is known to occur in the alluvial plain and foothill areas. Appendix 2 lists the plant and animal species occurring in the Orocopia Mountains Management Unit which are classified as threatened, endangered, or are proposed to be listed by the Federal and/or State governments.

Water is extremely limited in this management unit. Several artificial water catchments, big game guzzlers, have been constructed to provide permanent water sources for desert bighorn sheep (*Ovis canadensis nelsoni*), desert mule deer (*Odocoileus hemionus crooki*), and other wildlife. Additionally, four springs have been improved to increase water flow, storage capacity, and access. Four tenajas (natural

tanks) have been found, to date, on the management unit. One of the most significant habitat improvements, albeit unintentional, constructed is the Coachella Canal, located at the southern boundary of this management unit. Since its construction by the Bureau of Reclamation in the 1940s, this canal has provided a year-around source of water in that portion of the management unit. That portion of the canal that is not cement-lined continues to provide water for wildlife, particularly where the canal is proximate to escape terrain.

Desert bighorn sheep occur throughout this management unit, from Hidden Spring in the west to Red Canyon in the east. Most bighorn observations have been made at water sources. Recent monitoring of radio-collared bighorn sheep indicate that male bighorn sheep move between the Orocopia Mountains and the Chocolate Mountains (Chocolate Mountains Aerial Gunnery Range) to the south, across the Salt Creek Wash (Mulcahy et al. 1995), and eastward to the Chuckwalla Mountains. This monitoring effort has also identified several high use areas that include Orocopia Canyon, and Orocopia Peak. Fencing along Interstate 10 and the Coachella Canal probably restrict most bighorn movements (Bleich et al. 1996), but a few may cross to visit mountain ranges to the north.

Range conditions in these desert habitats are quite variable from year to year and season to season across the management unit. Range conditions within this management unit currently are as good as can be expected, given the aridity of the climate. A number of large desert washes are located within the management unit, and provide good-quality forage species in relative abundance. Currently, there are no BLM livestock grazing allotments, there are few feral animals, and human activities generally are limited to the western portion of the management unit. Although not identified as a BLM management area for feral burros in the California Desert Conservation Area Plan (BLM 1980), feral burros occasionally enter this management unit. To date, the number present has remained small. There does not appear to be any major damage to the bighorn habitat.

Annual rainfall has been average from 1990 through 2001. However, 1998 through 2000 rainfall was very low. Rainfall in 2002 was average, and above average in 2004. These rainfall patterns were confirmed using data from the Mecca 2 SE Weather Station, Riverside County, from the Western Regional Climate Center. Although no weather stations or official rain gauges are maintained in the Orocopia Mountains,

Department field biologists, researchers, and wardens with experience in the area were the sources of the information. (Leon Lesicka and Steven G. Torres, Department of Fish and Game, Sacramento). Any higher than normal fall/winter rainfall should produce a corresponding increase in the volume and quality of forage available to bighorn sheep. As stated previously, improved forage conditions tend to improve the physical condition and survival of bighorn sheep. Although recent drought conditions appear to have resulted in poor lamb recruitment, improved rainfall and maintenance of guzzlers appears to have stabilized adult survivorship, as observed in our fall surveys.

The Orocopia Mountains Management Unit includes approximately 46,400 hectares (114,700 acres). Approximately 69 percent of the management unit is in Federal ownership, administered by the BLM. About three percent is owned and administered by the State of California, and the balance is owned privately. A portion of this management unit along the southeastern edge is included within the Chuckwalla Bench Area of Critical Environmental Concern (ACEC). This ACEC was established by the BLM to protect the desert tortoise and the diverse flora of the Bench area.

In 1994, a legislative act entitled “California Desert Protection Act of 1994" (S. 21) passed Congress and designated wilderness areas and wilderness study areas to be administered by the BLM. This act also established the Mojave National Preserve, and Joshua Tree and Death Valley national parks to be administered by the NPS. Within this management unit, new administrative boundaries designating Wilderness have been established for the majority of this management unit. Areas now designated as wilderness will have the habitat within them protected in perpetuity or until congress determines that other values exceed those associated with wilderness classification. Nonetheless, wilderness designation is a double-edged sword, and complicates efforts to conserve wildlife in areas designated as such by making it difficult to implement habitat enhancement projects or to capture wildlife for purposes of research or translocation (Bleich 1999, 2000).

SAN GORGONIO WILDERNESS

The San Gorgonio Wilderness (Whitewater) Management Unit is located in the San Bernardino Mountains area in western San Bernardino County, east of the city of San Bernardino and north of Palm Springs. This management unit is generally bounded on the north by Highway 18 and Highway 247, on the east by Highway 62, on the south by

Interstate 10, and on the west by Interstate 215 and Interstate 15.

The San Gorgonio Wilderness largely is within the San Bernardino National Forest and part of one of the Transverse Ranges of southern California, which run generally east/west rather than north/south. There is a great variety of topography and habitats, resulting from differences in elevation, aspect, and slope. San Gorgonio Mountain is 3,500 meters (11,500 feet) in elevation, is on the western edge of the bighorn range, and is the highest peak in the coastal mountains of southern California. Major drainages in this area include Mission Creek, Whitewater River, and Mill Creek Canyon.

Precipitation in winter frequently falls as snow, especially at elevations above 1,500 meters (5,000 feet). However, summer showers may provide most precipitation on eastern and northern slopes. Annual precipitation varies with elevation and aspect. An average of approximately 76 centimeters (30 inches) falls at higher elevations, and as little as 5-13 centimeters (2-5 inches) falls at the lowest elevations on north- and east-facing slopes. Temperatures also vary with elevation and aspect. At lower elevations in summer, daytime high temperatures above 38 degrees Celsius (100 degrees Fahrenheit) are common. Temperatures below freezing may occur at almost any elevation in the winter.

Surface water occurs throughout the bighorn range (Weaver et al. 1972), especially in the Whitewater River drainage. Therefore, no water sources have been developed specifically for bighorn in this management unit.

Bighorn sheep occupy habitats on the eastern and western slopes of the San Gorgonio Wilderness. These areas largely are composed of granitic soils, but substantial areas of limestone also are present (Bailey and Jahns 1954). Desert-facing slopes support transition habitats between conifer forests and desert scrub. At elevations above 1,800 meters (6,000 feet), scattered conifers and bare rock predominate. From 1,800 meters down to 1,200 meters (6,000 to 4,000 feet), a pinyon-juniper habitat (Mayer and Laudenslayer 1988) is dominant. Below 1,200 meters (4,000 feet), a shrub habitat that contains elements of chaparral and desert scrub is widespread (San Bernardino National Forest 1986). A query of the most recent update of the CNDDB indicated a tremendous diversity of vegetation in this region, including several species of plants that are listed as threatened, endangered, or proposed for listing by the Federal government or State of California. These include Parish's daisy, California dandelion, Bear Valley

sandwort, triple-ribbed milk-vetch, Coachella Valley milk-vetch, Cushenbury buckwheat, ash-gray indian paintbrush, and San Bernardino blue grass.

A query of the CNDDB indicated only two birds and three reptiles considered to be either threatened, endangered, or proposed for listing by the Federal government or the State of California. These include the desert tortoise, Coachella Valley fringe-toed lizard, southern rubber boa, willow flycatcher, and least Bell's vireo. Appendix 2 lists the plant and animal species occurring in the San Gorgonio Wilderness (Whitewater) Management Unit which are classified as threatened, endangered, or are proposed to be listed by the Federal and/or State governments.

Desert bighorn sheep (*Ovis canadensis nelsoni*) occur primarily in the southeastern portion of this management unit, along the south and middle forks of the Whitewater River, Mission Creek, and west to San Gorgonio Mountain (Schaefer et al. 1997). Ewes frequent steep slides and other areas along the Middle Fork, and the East Fork of the South Fork of the Whitewater River during the spring lambing season. Rams often are found at lower elevations (Weaver et al. 1972). In summer, bighorn range extends to the top of San Gorgonio Mountain, although rams have been seen as low as 1,200 meters (4,000 feet) elevation in the middle and south forks of the Whitewater River in late spring and early summer. A few bighorn sometimes winter in the Mill Creek or Sawmill Canyon areas west of the main winter range (Weaver et al. 1972, Light et al. 1966). Historically, bighorn sheep have been reported from Pipes Canyon and Little Morongo Canyon (Light et al. 1966), east of the currently occupied range, and a population once existed in the Bighorn Mountains to the north of currently occupied range (Weaver et al. 1972). Interstate Highway 10 and California State Highway 62 both probably restrict movements of bighorn between adjacent herds (Bleich et al. 1996).

Range conditions in these habitats are variable from year to year, season to season, and by elevation. Range conditions within this management unit currently are as good as can be expected, given the aridity of the Transverse Ranges. A number of large drainages and canyons provide good-quality forage species in relative abundance. These ridge areas also offer excellent escape terrain and movement corridors for elevational movements between summer and winter ranges. Currently there are nine grazing allotments for cattle on this management unit. Only two of these, the Whitewater and the Rattlesnake allotments, occur in areas either known or suspected to be occupied by bighorn. Both of these allotments are administered by the BLM. Weaver et al. (1972)

suggested that in the early 1970s there was apparently little direct competition for forage between domestic livestock and bighorn, because there was little overlap of ranges. This still may be true in those areas of the San Bernardino National Forest that are used by bighorn during summer and early autumn. However, observations of bighorn as low as 1,200 meters (4,000 feet) elevation indicate that there is overlap of ranges at low elevations. Feral burros have been observed in the Mission Creek watershed; however, the effects of feral burros on bighorn in this management unit appears to be minimal.

As would be expected, total annual and winter/spring rainfall patterns are variable. Annual rainfall in 1991 through 2002 generally has been good, but 1997 through 2001 has been lower than average. Precipitation data from the Big Bear Lake Weather Station, San Bernardino County, from the Western Regional Climate Center was the resource of this information. Any higher than normal fall/winter rainfall should produce a corresponding increase in the volume and quality of forage available to bighorn sheep. As stated previously, improved forage conditions tend to improve the physical condition and survival of bighorn sheep.

Much of this management unit, and almost all of the bighorn range, is in public ownership. The USFS (San Bernardino National Forest) administers the western portion of the bighorn range, which includes portions of the San Gorgonio Wilderness Area. Currently, the Department and the San Bernardino National Forest have developed a Memorandum of Understanding for cooperative management activities.

BLM administers much of the eastern portion of the management unit. Most of the bighorn range on BLM lands lies a BLM Wilderness Area. In 1994, a legislative act entitled “California Desert Protection Act of 1994" (S. 21) passed Congress and designated wilderness areas and wilderness study areas to be administered by the BLM. Within this management unit, new administrative boundaries designating Wilderness have been identified and published by the BLM. Areas designated as wilderness will have the habitat within them protected in perpetuity or until congress determines that other values exceed those associated with wilderness classification. Nonetheless, wilderness designation is a double-edged sword, and complicates efforts to conserve wildlife in areas designated as such by making it difficult to implement habitat enhancement projects or to capture wildlife for purposes of research or translocation (Bleich 1999, 2000).

The Morongo Indian Reservation lies south of the bighorn range. Private land

holdings are numerous within this management unit, although most within the current bighorn range are small.

Sheep Hole Mountains

The Sheep Hole Mountains are a steep and rugged range oriented on a northwest/southeast axis. Elevations on the management unit vary from 180 meters (590 feet) near Bristol Dry Lake to 1406 meters (4613 feet) at the highest point in the Sheep Hole Mountains. Within the management unit, approximately 65 km^2 (25 mi^2) of habitat for desert bighorn sheep (*Ovis canadensis nelsoni*) occur in the Sheep Hole Mountains. In addition, there are 41 km^2 (16 mi^2) of bighorn habitat in the Calumet Mountains, in the northeastern part of the management unit. Much of this habitat probably supports bighorns only seasonally.

Soils in the management unit largely are granitic, with numerous areas of large granite boulders (Weaver and Mensch 1971). Maximum daytime temperatures in summer frequently exceed 38^{o}C (100 ^{o}F). Temperatures below freezing are not uncommon in winter (Freiwald 1984). Precipitation averages 7 cm (2.7 in) annually, occurring mostly during winter from Pacific weather fronts. Summer storms are infrequent, unpredictable, and often local (Weaver and Mensch 1971). Approximately 80% of the Sheep Hole Mountains Management Unit is in public ownership, administered by the Bureau of Land Management (BLM).

Vegetation in this management unit is typical of the Mojave Desert. Desert scrub and desert wash habitats are widespread (Mayer and Laudenslayer 1988). Creosotebush (*Larrea tridentata*) is abundant in the desert scrub habitat, and catclaw acacia (*Acacia greggii*) and desert lavender (*Hyptis emoryi*) are widespread in the desert wash habitat. South-facing slopes at lower elevations are nearly devoid of vegetation in some areas. These habitats are very arid. No permanent, natural water sources have been found on the management unit. Two artificial catchments have been constructed and provide permanent sources of water.

As discussed by Pauli et al. (1991), range conditions in this desert habitat are quite variable from year to year and season to season across the management unit. Range conditions within this management unit currently are as good as can be expected, given the aridity of the climate. A number of large desert washes are located within the

management unit, and provide good quality forage species in relative abundance. Annual rainfall has been good from 1990 through 2002. However, 1996 and 1998 though 2000 rainfall was lower than average. Rainfall in 2002 was average, and was above average in 2004. Although no weather stations or official rain gauges are maintained in the Sheep Hole Mountains, precipitation data from the Twenty nine Palms Weather Station, San Bernardino County, was the source of this information (Western Regional Climate Center). Any higher than normal fall/winter rainfall should produce a corresponding increase in the volume and quality of forage available to bighorn sheep. As stated previously, improved forage conditions tend to improve the physical condition and survival of bighorn sheep.

Currently, there are no BLM livestock grazing allotments, there are few feral animals, and human activities generally are limited to the western portion of the management unit. Although not identified as a BLM management area for feral burros in the California Desert Conservation Area Plan (Bureau of Land Management 1980), feral burros occasionally enter this management unit. To date, the number present has remained small. There does not appear to be any major damage to the bighorn habitat.

A query of the California Natural Diversity Data Base (CNDDB) indicated only 1 reptile and 1 plant species considered to be either threatened or endangered by the Federal Government or the State of California. The desert tortoise [*Xerobates (Gopherus) agassizi*] is known to occur in the alluvial plain and foothill areas. Additionally, the Orocopia sage (*Salvia greatae*) has been recorded in the Marble Mountains. Appendix 3 includes the plant and animal species occurring in the in the Sheep Hole Mountains Management Unit which are classified as threatened, endangered, or are proposed to be listed by the Federal and/or State governments.

As part of our commitment to restoring bighorn sheep populations in historic mountain ranges, a small translocation of desert bighorn sheep was initiated in the Sheep Hole Mountains (San Bernardino County) in 1984. This project had initially two phases. In the first phase (November 1984) the Department moved 11 desert bighorn (7 females, 4 males) from Old Dad Peak. This was followed up in July (1985) with a second translocation of 16 desert bighorn (12 females, 4 males) to augment the new herd. Lastly in 1992, 4 rams from Old Dad Peak were moved to this population. Subsequent population assessments were made to monitor the success of this bighorn sheep population by periodic fixed-wing flights and helicopter surveys. Most importantly, water guzzlers were developed and maintained with the volunteer support of the Society for the

Conservation of Bighorn Sheep (SCBS). In 1999, a helicopter survey counted 82 bighorn sheep, nineteen of which were recorded as class rams. We estimate that this population is now between 100 to 150 animals, and this project has been a great success that will benefit neighboring herds and add to the overall viability of bighorn sheep populations in the region.

Bighorns of both sexes move freely throughout the Sheep Hole Mountains. Ewes with young lambs frequently use the steeper areas in the northwestern third of the range. Bighorns also occur in the Calumet Mountains, but perhaps only seasonally. Movements of telemetered individuals have confirmed that bighorns travel from the Sheep Hole Mountains across Sheep Hole Pass to the Bullion Mountains (Pauli and Vernoy, unpublished data) as suggested by Jones and Deming (1953). Other documented movements included a collared ram transplanted into the Sheep Hole Mountains in 1984 from the Kelso/Old Dad Peaks Management Unit that later moved to the Coxcomb Mountains, where it died. Additionally, movements by both rams and ewes occur within this management unit between the Calumet Mountains and the Sheep Hole Mountains.

In 1994, a legislative act entitled “California Desert Protection Act of 1994" (S.21) passed Congress and designated wilderness areas and wilderness study areas to be administered by the BLM. This act also established the Mojave National Preserve, and Joshua Tree and Death Valley National Parks to be administered by the National Park Service. Most of this region is now designated wilderness. Areas designated as wilderness will have the habitat within them protected in perpetuity or until Congress determines that other values exceed those associated with wilderness classification. Nonetheless, wilderness designation is a double-edged sword, and complicates efforts to conserve wildlife in areas designated as such by making it difficult to implement habitat enhancement projects or to capture wildlife for purposes of research or translocation (Bleich 1999, 2000).

WHITE MOUNTAINS

The White Mountains Management Unit is located in northeastern Inyo County and southeastern Mono County, adjacent to the California-Nevada state line. The management unit is bounded on the south by California Highway 168 and California Highway 266, on the west by U.S. Highway 6, and on the north and east by the California-Nevada state line. The management unit is largely within lands administered by the United States Forest Service (USFS), Bureau of Land Management (BLM), and Los Angeles Department of Water and Power (LADWP).

The White Mountains is a vast range located at the interface of the Pacific-influenced Sierra Nevada - Cascade Province and the arid Basin and Range Province (Hall 1991) along the California-Nevada border. Most bighorn sheep habitat is on the crest and the west slope of the range, south and west of the state line. Much of the terrain within the White Mountains is extremely precipitous. Canyons rise sharply from valley floors at elevations of about 4,500 feet up to areas as high as White Mountain peak at 14,246 feet. Most of the canyons on both the east and west sides of the White Mountains support at least seasonal flowing water during the year. Many canyons, especially on the east side, have water flow throughout the year. There are a multitude of springs that occur throughout the range, especially at the upper elevations. The

amount of flow and length of time that flow occurs is highly dependent on precipitation levels for that year.

Portions of the management unit used by bighorn sheep range in elevation from about 5,200 ft in Silver Canyon to > 14,246 ft on White Mountain Peak (Kovach 1979, Wehausen 1983). Habitats used during summer are predominately alpine vegetation types dominated by grasses, sedges (*Carex* spp.) and forbs; a detailed description of habitat use by bighorn sheep in the White Mountains was provided by Wehausen (1983). During the winter months, sheep tend to use open areas in the lower parts of the White Mountains. These areas are dominated by mosaics of shrub species and open forest.

Climatic conditions vary considerably within the White Mountains. Arid conditions prevail due to the rain shadow effect of the Sierra Nevada to the west. Precipitation varies from about 4 inches in the lower valleys to over 20 inches (including much snow) at the top of the range. Summer high temperatures range from 80 to over 100 degrees Fahrenheit. The highest elevations rarely approach 70 degrees Fahrenheit during the summer months. Winter low temperatures range from approximately freezing at the base of the range to well below zero at White Mountain Peak (Hall 1991).

Four species of ungulates native to California occur within the management unit. Three of these (pronghorn, *Antilocapra americana*; mule deer, *Odocoileus hemionus*; and mountain sheep, *Ovis canadensis*) are native to the area. Tule elk (*Cervus elaphus nannodes*), a species native to coastal and central California, were translocated to the Owens Valley in the 1930s, and tule elk occupy the low-elevation, west-facing slope on a seasonal basis; tule elk do not range into areas currently occupied by bighorn sheep. Limited numbers of pronghorn occupy the low-elevation alluvial fans adjacent to both the west-facing and east-facing slopes of the range. Mule deer occur throughout the White Mountains, and are sympatric with bighorn sheep.

Like many areas of public land, the White Mountains were once heavily grazed by

domestic sheep (*Ovis aires*). US Forest Service records show that, from 1923 to 1933, 40,000 sheep were grazed in the White Mountains. Currently, no active sheep allotments occur there today.

Domestic cattle (*Bos taurus*) are grazed on public lands administered by the USFS and BLM, as well as on private lands within the management unit. Currently, virtually all land suitable for livestock grazing in the White Mountains provides for cattle allotments. This includes all land on the northern and eastern slopes. Approximately 233,000 acres are grazed by cattle in the White Mountains. There are currently 7 active and 2 inactive grazing allotments in the White Mountains. The seven active grazing allotments from north to south include Queen Valley, Trail Canyon, Davis Creek, Indian Creek, Perry Aiken, Crooked Creek and Deep Springs. The two inactive allotments are Tres Plumas and Cottonwood Creek.

Feral horses (*Equus caballus*) occur on public lands administered by the USFS in the Montgomery Peak Wild Horse Territory and the White Mountain Wild Horse Territory; these animals also range on BLM lands adjacent to USFS administered areas. Feral horses occur largely to the north and east of the White Mountains and are outside of areas occupied by bighorn sheep and, as such, are not a management or conservation issue.

A query of the California Natural Diversity Data Base (CNDDB) indicated only 1 fish and 1 animal species considered to be either threatened or endangered by the Federal Government or the State of California. The California wolverine (*Gulo gulo*), which has not been seen since 1937, is probably extinct from the White Mountains. Additionally, the Paiute cutthrout trout (*Oncorhynchus clarki seleniris*) has been recorded in the White Mountains. This species occurs in the North Fork of Cottonwood Creek, Cabin Creek, Granite Meadow and downstream of Tres Plumas. Appendix 4 includes the plant and animal species occurring in the in the White Mountains Management Unit that are classified as threatened, endangered, or are proposed to be listed by the Federal

and/or State governments.

Detailed summaries (Wehausen 1983, 1985; Schroeder 2004) of the status and distribution of bighorn sheep in the White Mountains, Mono and Inyo counties, indicate three primary areas are inhabited by bighorn sheep in that range during summer. Two demographically distinct subpopulations of female sheep, the Montgomery Peak herd unit and the White Mountain Peak herd unit, occupy the northern part of the range (Wehausen 1990); a third distinct herd unit occupies Silver Canyon, immediately east of Bishop, Inyo County (Schroeder 2004). Bighorn sheep were introduced in Silver Canyon in 1988, an action that led to their reestablishment in a formerly occupied portion of the White Mountains.

During winter, female bighorn sheep comprising the White Mountain Peak herd unit inhabit Willow, Cottonwood, Lone Tree, Jeffrey, and Milner canyons; females from the Montgomery Peak herd unit inhabit Montgomery, Marble, Queen Dicks, Rock, Falls, and Pellisier canyons (Wehausen 1990). Two canyons utilized only by males separate these 2 female groups. It is probable that some movement by males between these female areas occurs regularly (Weaver and Mensch 1970). Females from both subpopulations regularly cross the crest to the top of east side canyons (Wehausen 1990). During summer, females from the Silver Canyon herd unit are found at low elevations in Silver Canyon because suitable high elevation habitat is lacking.

Evidence suggests that bighorn sheep formerly were more widespread in the White Mountains than at present, but the only specific location that has been clearly identified is Wyman Canyon; nonetheless, there has been evidence of males using Black Canyon and Marble Canyon, on the southwest side of the range (Wehausen 1990, Schroeder 2004). Further, recent observations of females indicate the possibility of an entirely separate subpopulation in that area. It is reasonable to assume that bighorn sheep formerly had a yet more widespread distribution that included suitable habitat throughout the White Mountains.

CHAPTER 4. ENVIRONMENTAL EFFECTS OF THE PROPOSED PROJECT

METHODOLOGY

Hunting of bighorn sheep will result in the deaths of individual animals. The removal of individual male animals from only seven populations (Marble Mountains, Kelso Peak/Old Dad Mountains, Clark/Kingston Mountains, Orocopia Mountains, San Gorgonio Wilderness, Sheep Hole Mountains and White Mountains) is not expected to significantly reduce herd size significantly, nor to affect the reproductive base of the population. The proposed action (modification of hunting tag numbers in six hunt zones and the addition of one hunt zone) will result in maintaining these herds at or above the approved management plan objectives and will maintain the ratio of male to female bighorn sheep at levels adequate to insure reproduction.

The approximately 61 herds of bighorn sheep in California occur from Mono County in the north, to the Mexican border in the south (Torres et al. 1996). They are widely distributed, primarily throughout the southeastern part of the State and in the Sierra Nevada. Nelson bighorn sheep, the subspecies currently being considered in the proposed action, number about 3,600 and occur in Mono, Inyo, San Bernardino, San Diego, Riverside, Ventura, Imperial, and Los Angeles counties. Only seven populations of Nelson bighorn sheep are proposed to be hunted. Therefore, the other populations will not be influenced by that activity.

Assuming that all holders of bighorn sheep tags are successful, as many as 14 mature bighorn rams may be removed in 2005 from the statewide estimated population of 3,600 Nelson bighorn sheep. This short-term reduction of less than one percent of the total statewide population of Nelson bighorn sheep is well within the statewide population's ability to maintain or increase in size over the long-term. The ability of bighorn sheep populations to experience a given level of hunting mortality without decreasing in health or vitality is described by Savidge and Ziesenis (1980) as sustained-yield management. It is reasonable that a removal of less than one percent of the statewide population is compatible with the long-term conservation of the subspecies.

Thus, the removal of up to 14 male bighorn sheep is not expected to have a measurable impact on regional or statewide populations.

Pursuant to Section 4902, Fish and Game Code, the number of tags allocated will not exceed more than 15 percent of the mature rams estimated in each management unit. Depending on the management unit, assessment of aerial or ground survey data will ensure that harvest will not exceed 15 percent of the mature rams in each management unit, as provided for by State law.

Before taking action regarding this proposal, the Commission will consider bighorn sheep populations, habitat, food supplies, the welfare of individual animals, and other pertinent facts and testimony.

The Impact of Hunting on the Species Population

Additive and Compensatory Mortality

Under the proposed hunting programs, it is expected that a segment of the mortality previously called "natural" will be shifted to hunting mortality. To a degree, hunting mortality will be substituted for, rather than added to, natural mortality. This follows the concept of compensatory mortality described by Peek (1986), "If hunting is a compensatory form of mortality then populations may be presumed to fluctuate in response to other factors, and stocks are little affected by exploitation. However, if hunting is additive to other forms of mortality then it serves as a depressant."

Under the compensatory theory, the production and survival of young animals within each population are ultimately expected to replace the animals removed by hunting. At the low level of existing hunting, when combined with differential use of habitats by males and females during the birthing season (Bleich et al. 1997), influences of compensatory mortality are not expected to be measurable. Ongoing long-term demographic research on bighorn sheep populations has been funded to identify the primary factors influencing their abundance. Given the importance and significant variation in annual precipitation in these desert ecosystems and the associated variation in diet quality, density-dependent mechanisms are difficult to observe (Wehausen 1992). However, increased recruitment of lambs should produce population increases.

Since the current hunting of bighorn sheep will affect no more than seven of the State's approximately 61 populations of bighorn sheep under the alternatives considered, the removal of individual animals is not expected to have a significant effect on the statewide population of bighorn sheep. The existing populations of bighorn sheep in California are geographically separated and widely distributed (Bleich et al. 1996). Therefore, the proposed action of adding 3 tags to the White Mountains should not have a significant adverse impact on either the specific population to be hunted or on the statewide population of bighorn sheep.

The Department is committed to long-term demographic investigations of bighorn sheep populations. This research is particularly important in management units for which individual bighorn sheep are removed for translocation or harvest. To facilitate this research, animals have been radio-telemetered and monitored in each proposed hunt zone.

The Department annually conducts fall/winter aerial surveys that involve counting bighorn sheep within the majority of the management units being considered in this assessment, and ground counts during summer are conducted in the White Mountains Management Unit. These surveys result in minimum population estimate, because many animals are missed in the survey. Several published articles (Caughley 1974, Samuel et al. 1987, Graham and Bell 1989, Bodie et al. 1995, Bleich et al. 2001, Bernatas and Nelson 2004) have demonstrated that significant portions of populations being surveyed using aerial census techniques are not observed because of "visibility bias". Estimates of observation bias are presented in each discussion of the hunt zones. Thus, aerial survey data are supplemented with independent ground surveys to record the numbers of marked and unmarked sheep. This synthesis of data has made it possible to accurately assess the changes in bighorn sheep numbers, ram/ewe and lamb/ewe ratios, and to monitor the impacts of hunting and relocation (Wehausen 1992). Additionally, these aerial and ground survey results are used for determining tag allocations, and to ensure that the proposed harvest does not exceed 15 percent of the mature rams in the respective management units.

The tag allocations have historically been determined by computing 15 percent of the mature rams observed during the annual surveys. As noted, this survey count information represents a minimum population estimate, and under-estimates the true population of available rams. This procedure will continue to be used to generally assign

tag allocations. Independent estimates of population size and demographic parameters of bighorn sheep populations are derived using a combination of aerial census and ground observations of marked and unmarked animals in the majority of the proposed hunt zones, and intensive ground surveys in the White Mountains. Wehausen (1990) and Jaeger et al. (1992) refer to this method as Multiple Direct Sampling (MDS). This method estimates population parameters from cumulative (or repeated) surveys that record the number of marked and unmarked animals observed, and assumes binomial sampling probabilities with replacement (Wehausen 1992).

The herd plan objectives include maintaining a 40 ram:100 ewe ratio to provide a reasonable opportunity to view mature rams and insure reproductive success.

Marble/Clipper Mountains Bighorn Sheep Hunt

Movements between the Marble and Clipper mountains occurs commonly (A. M. Pauli, California Department of Fish and Game, unpublished data). Additionally, movement of female sheep from the Marble Mountains into the southern Bristol Mountains was recently documented (Wehausen 1994, Department memo summarizing aerial survey results; Bleich et al. 1996). Such intermountain movements are thought to occur with much greater frequency than had been realized in the past, and this interaction is consistent with the long-term conservation of the species (Schwartz et al. 1986, Bleich et al. 1990b, Bleich et al. 1996). Given the current amount of use occurring in the Marble and Clipper mountains by hikers, backpackers, and other outdoor enthusiasts without negative effects, no effect on movements of bighorn sheep, nor on use patterns within the these mountains, are expected to occur as a result of the hunt. Bighorn sheep appear to tolerate the existing level of recreational use of the area.

During October 5-6, 2004, the Department conducted a census of bighorn sheep in the Marble and Clipper Mountains. The age and sex composition of bighorn sheep was 59 ewes, 31 lambs, and 43 rams. Based on the number of animals actually observed in the survey, 15 percent of the number of rams observed would result in the proposed issuance of license tags for six mature rams
(43 x .15 = 6.45). The Department proposed the issuance of three license tags.

The removal of bighorn sheep for translocation purposes did not occur in 2004.

Based on information gathered through bighorn sheep hunting seasons during 1987-2004, hunter success is expected to be variable. It has ranged from 0 to 100 percent. However, for the purposes of analyzing the effects of the harvest, it will be assumed that all the tagholders will be successful. Additionally, because the open-zone fund-raising tagholders may elect to hunt in this zone, the effects of this potential harvest of additional rams will be assessed. Because tags will be issued for mature males only, the removal will consist entirely of adult males.

In 2004, the Department surveyed this hunt zone using the double-count methodology described by Graham and Bell (1989). This method was implemented to augment our existing survey data and to provide a better estimate of the percentage of the bighorn population observed. The estimates derived through this method will provide additional indices to track changes in the respective bighorn populations, and ensure compliance with State law requiring that tags shall not be allocated for more than 15 percent of the total estimated ram population in each management unit (Section 4902, Fish and Game Code). This method is conservative in that only the number of individuals available to be seen within the visibility range of the helicopter are estimated (Graham and Bell 1989). For example, many groups of bighorn sheep are not seen because they were not covered by the helicopter flight transects. Therefore, this survey method is primarily being used to determine that a proportion of the bighorn sheep population was not observed.

In 2004, Pauli (November 2001, Department memo summarizing aerial survey results) noted that 5 of 10 marked female bighorn sheep were observed. Conservatively, this implies that approximately 50 percent of the bighorn sheep were observed. Given that mature bighorn sheep rams are more difficult to observe (Bleich, Torres, and Wehausen, unpublished Department survey results) due to their relatively solitary nature, it is very likely that less than 50 percent of the male bighorn sheep were observed. Given that the 43 rams observed constituted less than 50 percent of the rams within the population, the current allocation of three tags in the Marble Mountains Management Unit is in compliance with State law.

Bighorn sheep ram population estimates are functions of the observed sex ratios from the aerial survey data, and may be over- and under-estimates of the true ratio of males to females in the respective years. Several authors (Johnson 1989, Makridakis et al. 1983) have demonstrated that estimates of population parameters are not

independent, and can be improved by using a time-series approach. This approach uses survey data from previous years, and is particularly appropriate for populations that do not change drastically from one survey to the next (Johnson 1989). A sex ratio of 94 males:100 females was computed using a moving average based on three years (2002-2004) of aerial survey data (Pauli and Torres 2001; unpublished data). Given the relatively low observability rate of rams, this average sex ratio is likely an underestimate. Although the proposed project may result in the deaths of three mature male bighorn sheep in the Marble Mountains, this level of hunting mortality will not have a significant negative effect on the local population. Indeed, if no other demographic changes occur in the Marble Mountains during 2003, the removal of three mature rams would not lower the sex ratio below herd plan objectives (40 rams:100 ewes). Additionally, if the open-zone fund-raising tagholders harvest rams in this management unit, the sex ratio would remain above the minimum of 40:100 called for in the Marble Mountains herd management plan. Further, the Department successfully reestablishes bighorn populations with sex ratios as low as 33 rams:100 ewes.

The harvest of three rams represents only 7 percent of the rams observed in the surveys (3/43 = 0.697). If the open-zone fund-raising tagholders choose to hunt in this zone and successfully harvest rams, this potentially raises the total number of harvested rams to five. This harvest level (five rams) is unlikely, but would represent 11.6 percent of the rams observed (5/43 = 0.116). Both of these levels are below the harvest level (15 percent) authorized in Section 4902, Fish and Game Code.

Extensive ground and aerial survey work in the Marble Mountains has revealed very little evidence of natural mortality, aside from one ram that drowned in a water catchment in 1988 and another that apparently died of natural causes in 1989. Similarly, Wehausen (1992) reported high annual survival rates for ewes in the Marble Mountains (annual survival = 93 percent).

Because natural mortality rates are very low, rams killed by hunters in the Marble Mountains since 1987 (through 2003) probably represent a substantial portion of the mortality experienced by the male cohort. However, Wehausen (1988, 1990) and Wehausen and Bleich (1986) have discussed the ramifications of low recruitment rates in this population, relative to mortality rates. In the proximate sense, mortalities due to hunting are additive to natural mortality in this population. However, as the top-heavy age structure of this population matures (and begins to undergo natural attrition), hunting

mortality that appeared to be additive in previous years takes on the characteristics of natural mortality. Thus, the removal of some old age rams, in all probability, will not influence the number of old age rams present in five years. The removal of no more than 15 percent of the mature rams is too low to result in measurable changes in terms of the compensatory mortality theory. It will not be expected to produce increased lamb survival which can be measured.

Torres et al. (1994b) analyzed the hunter harvest of bighorn sheep from 1987-1992. This analysis did not detect any significant decreasing patterns in hunter success or sizes of harvested rams. Therefore, the current harvest level has not resulted in the decreased availability of legal rams.

The October 2004 surveys revealed a high lamb count with respect to the number of observed ewes (72 lambs:100 ewes). As lamb recruitment increases and the impacts of this conservative harvest will become even less significant. Recent lamb and yearling survival (1997 through 2004) suggest that this population is increasing.

Kelso Peak/Old Dad Mountains Bighorn Sheep Hunt

Bighorn sheep range throughout the management unit. Currently, bighorn sheep move back and forth between the Kelso Peak/Old Dad Mountains and the Lava Beds to the north and the Marl Mountains to the east. A small contingent of ewes annually utilizes the Cowhole Mountains to the west of Old Dad Peak. Movements of bighorn sheep into the management unit from the New York Mountains, 10 miles to the east of the Marl Mountains, has been documented. Male and female bighorn sheep regularly move between Old Dad Peak, the Kelso Mountains, and the Marl Mountains (Bleich et al. 1997), and male bighorn sheep also move between the former three ranges and the Lava Beds, 15 miles to the north of Old Dad Peak (A. M. Pauli and V. C. Bleich, unpublished data). These findings are based on extensive, long-term radio telemetry studies. During 1990, movement by a telemetered ram to the Soda Mountains was noted.

The intermountain movements occur with great regularity, and this interaction is consistent with the long-term conservation of the subspecies (Schwartz et al. 1986, Bleich et al. 1990b, Bleich et al. 1996). Given the current amount of use occurring in the Kelso Peak/Old Dad Mountains by hikers, backpackers, upland game hunters, miners, and livestock operators with no significant effects detected, no effect on movements of

bighorn sheep, nor on use patterns within the management unit, is expected to occur as a result of the hunt.

During 6-7 October 2004, the Department conducted a census of bighorn sheep in the Kelso Peak/Old Dad Mountains. The age and sex composition of bighorn sheep was 60 ewes, 50 lambs, and 40 rams. Based on the number of animals actually observed during this survey, 15 percent of the number of rams observed would result in the proposed issuance of license tags for six mature rams (40 x .15 = 6.0). The Department proposed the issuance of license tags for four mature rams.

Based on information gathered during bighorn sheep hunting seasons from 1987-2003, hunter success is expected to be high. Therefore, for the purposes of analyzing the effects of the harvest, it was assumed that all tagholders will be successful. Additionally, because the open-zone fund-raising tagholders may elect to hunt in any hunt zone, the effects of the potential harvest of two additional rams will be assessed. Because tags will be issued for mature males only, the removal will consist entirely of adult males.

In 2004, the Department surveyed this hunt zone using the double-count methodology described by Graham and Bell (1989). This method was implemented to augment our existing survey data and to provide a better estimate of the percentage of the bighorn population observed. The estimates derived through this method will provide additional indices to track changes in the respective bighorn populations, and ensure compliance with State law requiring that tags shall not be allocated for more than 15 percent of the total estimated ram population in each management unit (Section 4902, Fish and Game Code). This method is conservative in that only the number of individuals available to be seen within the visibility range of the helicopter are estimated (Graham and Bell 1989). For example, many groups of bighorn sheep are not seen because they were not covered by the helicopter flight transects. Therefore, this survey method is primarily being used to determine that a proportion of the bighorn sheep population was not observed.

In 2004, Pauli (13 October 2004, Department memo summarizing aerial survey results) estimated that there were 176 bighorn sheep available to be seen within the survey polygons. To be conservative we will use this population estimate (176) to assess the impacts of the potential harvest. Given that the animals actually observed consisted

of 40 rams, 60 females, and 50 young, a total of (40/150) * (176) yielded a minimum of 47 males in the population. State law provides that harvest rates be restricted to no more than 15% of the total males in the population, which could result in the harvest of 7 males (0.14 x 47 = 7.05). Thus, the recommended allocation of four tags in the Kelso Peak/Old Dad Mountain Management Unit is in compliance with State law.

Several authors (Johnson 1989, Makridakis et al. 1983) have demonstrated that estimates of population parameters are not independent, and can be improved by using a time-series approach. This approach uses survey data from previous years, and is particularly appropriate for populations that do not change drastically from one survey to the next (Johnson 1989). Therefore, a sex ratio of 74 males:100 females was computed using a moving average based on three years (2002-2004) of aerial survey data (V. C. Bleich and A. M. Pauli 2004; unpublished survey data). This sex ratio estimates that rams constitute 43 percent of the total population (76/176=.43; where 76 and 176 represent a theoretical relationship between numbers of rams and the minimum population, respectively. This percentage of rams conservatively estimates the ram population at 59 prior to the 2004 hunt (74/222)* 176 = 58.7). Thus, the 40 rams observed during the October 2004 survey represent approximately 68 percent of the minimum ram population. However, given the relatively low observability rate of rams, this averaged sex ratio is likely an underestimate. Regardless, these data further suggest that the proposed action represents a biologically conservative hunting program and is in compliance with State law.

Although the proposed project may result in the deaths of four mature male bighorn sheep in the Kelso Peak/Old Dad Mountains unit, this level of hunting mortality will not have a significant negative effect on the local population. Indeed, if no other demographic changes occur in this management unit during 2005, the removal of four mature rams in 2005 would not lower the sex ratio below 40 rams:100 ewes (herd plan objectives). Additionally, if the open-zone fund-raising tagholders harvest rams in this management unit, the sex ratio would remain above 40 rams:100 ewes. Both of these ratios remain similar to the 65-70 commonly seen in unhunted populations (Aldous 1957, Leslie and Douglas 1979, Holl and Bleich 1983, and many others). Further, the Department successfully reestablishes bighorn populations with sex ratios as low as 33 rams:100 ewes.

The 2004 proposed harvest of four rams represents 6.9 percent of the estimated

ram population (4/58 = 0.069). If the open-zone fund-raising tagholders chooses to hunt in this zone, and successfully harvests rams, this potentially raises the total number of harvested rams to six. This harvest level (six rams) would represent 10.3 percent of the estimated ram population (6/58 = 0.103). Both of these levels are below the harvest level (15 percent) authorized in Section 4902, Fish and Game Code.

The Old Dad Peak population has served as the primary source of translocation stock for reintroduction efforts in the Mojave Desert. To date, a total of 157 females and 65 males have been removed for translocation purposes. Given the likelihood that Old Dad Peak will continue to serve as a major source of reintroduction stock and the extremely conservative ram hunting harvest rates that could be imposed in the future (limited to 15 percent of the estimated number of mature rams), it is not anticipated that the cumulative effects of ram removals will result in a significant decline in ram:ewe ratios, and the sex ratios are expected to indefinitely remain at or above the minimum of 40 specified in the Old Dad Peak herd management plan.

All indications are that natural mortality in both sexes is very low, based on extensive aerial and ground surveys that have been ongoing since 1986 (Wehausen 1992; J. D. Wehausen, unpublished data). Although equality of mortality rates must necessarily be assumed, the realized rates are, no doubt, low.

The October 2004 survey revealed 83 lambs with respect to 100 ewes. This ratio reflects the relationship between increased rainfall (that occurred in 2004), and resultant forage production. As a result, impacts of this conservative harvest will be even less significant. This population continues to increase or remain stable (1996-2004).

Clark/Kingston Mountains Bighorn Sheep Hunt

The existing hunt in the Clark/Kingston management units will be conducted over the entire unit boundaries. Bighorn sheep range throughout these management units. The ewe population in the Kingston Range appears to consist of two subgroups, one of which spends the winter and lambing season in the Mesquite Mountains (Jaeger 1994). The ewe population in the Clark Mountain Range appears to migrate northeast from Clark Mountain in the winter to Devil and Little Devil peaks, Nevada during the lambing seasons; and the ram population appears to move freely between the ranges (Jaeger 1994).

The intermountain movements occur with regularity, and this interaction is consistent with the long-term conservation of the subspecies (Schwartz et al. 1986, Bleich et al. 1990b, Bleich et al. 1996). Given the current amount of use occurring in the Clark/Kingston Mountains by hikers, backpackers, upland game hunters, miners, and livestock operators with no significant effects detected, no effect on movements of bighorn sheep, nor on use patterns within the management units, are expected to occur as a result of the hunt.

During 27-28 September 2004, the Department conducted a census of bighorn sheep in the Clark/Kingston Mountains. The age and sex composition of bighorn sheep was 35 ewes, 2 lambs, and 16 rams. Based on the number of animals actually observed during this survey, 15 percent of number of rams observed would result in the proposed issuance of license tags for two mature rams (16 x .15 = 2.4). The Department proposed the issuance of one license tags, which is no change to the current issuance of one license tag.

The removal of bighorn sheep for translocation purposes did not occur in 2002.

Based on information gathered through bighorn sheep hunting seasons since 1992, hunter success has been 0-100 percent. For the purposes of analyzing the effects of the harvest, however, it will be assumed that all the tagholders will be successful. However unlikely, because the open-zone fund-raising tagholders may elect to hunt in any zone, the effects of this potential harvest will be assessed. Because tags will be issued for mature males only, the removal will consist entirely of adult males.

In 2004, the Department surveyed the Clark/Kingston/Mesquite part of this hunt zone using the double-count methodology described by Graham and Bell (1989). This method was implemented to augment our existing survey data and to provide a better estimate of the percentage of the bighorn population observed. The estimates derived through this method will provide additional indices to track changes in the respective bighorn populations, and ensure compliance with State law requiring that tags shall not be allocated for more than 15 percent of the total estimated ram population in each management unit (Section 4902, Fish and Game Code). This method is conservative in that only the number of individuals available to be seen within the visibility range of the helicopter are estimated (Graham and Bell 1989). For example, many groups of bighorn sheep are not seen because they were not covered by the helicopter flight transects.

During September 2004, Pauli (October 2004, Department memo summarizing aerial survey results) reported observations of 35 females, 2 lambs, and 16 males. Further, using the double-survey method of Graham and Bell (1989), he estimated that 96 bighorn sheep were available to be seen by the survey helicopter in the Kingston and Mesquite ranges alone. Given that an additional 17 animals were observed in the Clark Mountain Range, a minimum of 113 individuals is expected to inhabit the hunt zone. Based on the animals observed during October 2004, age and sex ratios in the hunt zone were 6 lambs/100 females and 45.7 males/100 females.

A sex ratio of 45.5 males:100 females was computed by averaging the ratios from the 2002-2004 aerial survey data (A. M. Pauli and V. C. Bleich, unpublished survey data). This sex ratio estimates that 28 percent of the population is rams (45/157= 0.286); where 45 and 157 represent the relationship between total numbers of males and total numbers of animals observed during that period, respectively. This percentage estimates the ram population at 32 prior to the 2004 hunt [(45/157)*(113) = 32.4], and the female population at 71 [(99/157)*113 = 71.19)]. The 16 rams observed during the September 2004 survey may represent approximately 50 percent of the ram population. Given the relatively low observability of rams, this estimate is reasonable. For purposes of our population analysis, we will use the population estimate of 71 ewes and 32 rams, which yields an estimated sex ratio of 45 males/100 females.

The proposed project may result in the death of one mature male bighorn sheep in the Clark/Kingston Management Unit, but this level of hunting mortality will not have a significant negative effect on the local population. However, if no other demographic changes occur in this management unit during 2004, the removal of one mature ram will lower the observed sex ratio to 43 rams:100 ewes. This ratio is compatible with the minimum of 40:100 called for in the Clark/Kingston Mountains herd management plan (Vernoy and Bleich 1991, 1992). Nonetheless, because of lower observability of males when compared to females, this ratio likely is an underestimate of the expected sex ratio. Further, the Department successfully reestablishes bighorn populations with sex ratios as low as 33 rams:100 ewes.

The existing harvest rate of one ram represents 3.1 percent of the estimated ram population (1/32 = .031). Both of these levels are below the harvest level (15 percent) authorized in Section 4902, Fish and Game Code.

The September 2004 survey revealed a lamb count with respect to the number of observed ewes of 6 lambs:100 ewes, a very low value and consistent with poor reproduction over the past three years. Lamb recruitment has been low in this management unit for a number of years and, as a result, the proportion of older animals in the population has been increasing. Nonetheless, lack of recruitment dictates a conservative approach to harvest management should be considered.

Orocopia Mountains Bighorn Sheep Hunt

The existing hunt in the Orocopia Mountains will be conducted over the entire unit boundaries. Recent monitoring of radio-collared bighorn sheep has identified several high-use areas that include Orocopia Canyon and Orocopia Peak. This monitoring has also documented movements by bighorn rams between the Orocopia Mountains and the Chocolate Mountains (Chocolate Mountains Aerial Gunnery Range) to the south, across the Salt Creek Wash (Mulcahy et al. 1995). Trails, tracks, and other sign indicate that bighorn sheep may also move between the Chuckwalla Mountains and the Orocopia Mountains, across Chuckwalla Bench. Although fencing along Interstate 10 probably restricts most bighorn movements, a few may cross to visit mountain ranges to the north. Assuming that movements between these ranges occur, the Orocopia Mountains and these other ranges represent a metapopulation, and management direction should be to minimize obstructions to movement corridors (Bleich et al. 1990b, Bleich et al. 1996).

The intermountain movements occur with regularity, and this interaction is consistent with the long-term conservation of the subspecies (Schwartz et al. 1986, Bleich et al. 1990b, Bleich et al. 1996). Given the current amount of use occurring in the Orocopia Mountains by hikers, backpackers, upland game hunters, miners, and river recreationists with no significant effects detected, no effect on movements of bighorn sheep, nor on use patterns within the management unit, are expected to occur as a result of the hunt.

During 29-30 September 2004, Department conducted a census of bighorn sheep in the Orocopia Mountains. The age and sex composition of bighorn sheep was 23 ewes, 5 lambs, and 13 rams. Based on the number of animals actually observed during this survey, 15 percent of number of rams observed would result in the proposed issuance of license tags for one mature ram (.15 x 13 = 1.95). Given that low recruitment of young

has been very low in this zone for a number of years (G. P. Mulcahy and V. C. Bleich, unpublished data), demographic analyses dictate that a conservative approach to harvest management be implemented.

The removal of bighorn sheep for translocation purposes did not occur in 2001.

The Orocopia Mountains was a new hunt zone in 1996. However, based on information gathered through the bighorn sheep hunting seasons during 1987-1999, hunter success is expected to be high. It has ranged from 67 to 100 percent. Therefore, for the purposes of analyzing the effects of the harvest, it will be assumed that all the tagholders will be successful. Additionally, because the open-zone fund-raising tagholders may elect to hunt in this zone, the effects of this potential harvest of additional rams will be assessed. Because tags will be issued for mature males only, the removal will consist entirely of adult males.

In 2001, the Department surveyed this hunt zone using the double-count methodology described by Graham and Bell (1989). This method was implemented to augment our existing survey data and to provide a better estimate of the percentage of the bighorn population observed. The estimates derived through this method will provide additional indices to track changes in the respective bighorn populations, and ensure compliance with State law requiring that tags shall not be allocated for more than 15 percent of the total estimated ram population in each management unit (Section 4902, Fish and Game Code). This method is conservative in that only the number of individuals available to be seen within the visibility range of the helicopter are estimated (Graham and Bell 1989). For example, many groups of bighorn sheep are not seen, because they were not covered by the helicopter flight transects.

In 2002, Mulcahy (October 2001, Department memo summarizing aerial survey results) estimated that the 37 bighorn sheep observed constituted 66 percent of the animals available to be seen within the visibility polygons of the transects. It was estimated that there were 56 bighorn sheep available to be seen. In 1999 only fifty percent of the marked animals (6 marked in population) were observed. The 17 rams observed may have constituted approximately 50 to 66 percent of those available to be seen within the visibility polygons, and the recommended allocation of zero tags in the Orocopia Mountains Management Unit is in compliance with State law, and a harvet of zero rams will have no affect on the sex ratio in that hunt zone.

Given that the number of animals counted represented between 50 to 66 percent of the animals present, we can estimate the population to include 56 to 112 bighorn sheep. For the purposes of fully assessing the potential impacts of removing one mature ram, the minimum population estimate will be used. Using the 3 year averaged sex ratio of 57 rams:100 ewes (1999-2001), we estimate that 36.3 percent of the population is rams (57/157=.36; where 57 and 157 represent the relationship between number or rams and total population, respectively). Using this sex ratio we can estimate the population to be a minimum of 27 rams and 48 adult ewes. Although the proposed project may result in the death of one mature male bighorn sheep in the Orocopia Mountains, this level of hunting mortality will not have a significant negative effect on the local population. Indeed, if no other demographic changes occur in the Orocopia Mountains during 2003, the removal of one mature ram would lower the sex ratio to 54 rams:100 ewes (26/48=.54) Additionally, if the fund-raising tagholders harvest a rams in this management unit, the sex ratio would be 50 rams:100 ewes. This ratio is greater than the minimum of 40:100 called for in the Orocopia Mountains herd management plan (Thompson and Bleich 1991).

A harvest of one ram represents 3.8 percent of the estimated ram population (1/26 = .038). If the fund-raising tagholders successfully harvest additional rams in this zone, this potentially raises the total number of harvested rams to three. This harvest level (two rams) would represent 7.7 percent of the estimated ram population (2/26 = 0.077). Both of these levels are well below the harvest level (15 percent) authorized in Section 4902, Fish and Game Code.

The October, 2002 aerial surveys recorded a stable lamb count with respect to the number of observed ewes (11 lambs:100 ewes). Aerial surveys conducted in 2003 and 2004 similarly indicated low recruitment of lambs into this population. Recruitment has averaged 29 lambs:100 females over a nine year period. Lamb recruitment is driven largely by rainfall, and drought continues to plague the Orocopia Mountains. If drought conditions continue, impacts to lamb recruitment also will continue, with consequences for age structure and size of the population. Hence, the Department recommends a conservative approach to population management, with a proposed take of 0 animals during the 2005 hunting season.

San Gorgonio Wilderness Bighorn Sheep Hunt

The existing hunt in the San Gorgonio Wilderness will be conducted over the entire unit boundaries. Recent intensive monitoring of radio-collared bighorn sheep has identified several high-use areas that include Middle Fork (Middle Fork Jumpoff) of Whitewater, North Fork of Whitewater, Hell for Sure Canyon, and Mill Creek Jumpoff. This monitoring has also documented extensive movements by bighorn rams between Mission Creek (east) to Mill Creek (west). During the summer, bighorn sheep range extends to the top of San Gorgonio Mountain, although rams have been seen as low as 1,200 meters (4,000 feet) elevation in the Middle and South forks of the Whitewater River in late spring and early summer. Historically, bighorn sheep have been reported from Pipes Canyon and Little Morongo Canyon (Light et al. 1966), east of the currently occupied range; and a population once existed in the Bighorn Mountains to the north of currently occupied range (Weaver et al. 1972). Bighorn sheep have also been reported north of Big Bear Lake. Recent (1995) sightings of bighorn sheep in the Cushenbury Grade area were verified, and the Department radio-collared three bighorn sheep in the canyons west of the grade. Assuming that movements between these regions occur, the San Gorgonio Wilderness and these other areas represent a metapopulation, and management direction should be to minimize obstructions to movement corridors (Bleich et al. 1990b, Bleich et al. 1996).

The intermountain movements occur with regularity, and this interaction is consistent with the long-term conservation of the subspecies (Schwartz et al. 1986, Bleich et al. 1990b, Bleich et al. 1996). Given the current amount of use occurring in the San Gorgonio Wilderness by hikers, backpackers, hunters, miners, and river recreationists with no significant effects detected, no effect on movements of bighorn sheep, nor on use patterns within the management unit, are expected to occur as a result of the hunt.

In January 2004, the Department conducted a census of bighorn sheep in the San Gorgonio Wilderness. The age and sex composition of bighorn sheep observed was 19 ewes, 8 lambs, and 38 rams. Based on the number of animals actually observed during this survey, 15 percent of number of rams observed would result in the proposed issuance of license tags for 5 mature rams (38 x 0 .15 = 5.7). Nonetheless, the Department was unable to complete its Autumn survey in 2004 and, based on the potential for overwinter losses to have occurred during 2004 proposes to reduce the number of general tags in this zone from 2 to 1. Holders of fund-raising license tags could take 2 additional tags in this zone, for a potential harvest of 3 mature males.

The removal of bighorn sheep for translocation purposes did not occur in 2001.

The San Gorgonio Wilderness was a new hunt zone in 1996. However, based on information gathered through the bighorn sheep hunting seasons during 1987-present, hunter success is expected to be high. It has ranged from 67 to 100 percent. Therefore, for the purposes of analyzing the effects of the harvest, it will be assumed that all the tagholders will be successful. Additionally, because the open-zone fund-raising tagholders may elect to hunt in this zone, the effects of this potential harvest of additional rams will be assessed. Because tags will be issued for mature males only, the removal will consist entirely of adult males.

In 2002, the Department surveyed this hunt zone using the double-count methodology described by Graham and Bell (1989). This method was implemented to augment our existing survey data and to provide a better estimate of the percentage of the bighorn population observed. The estimates derived through this method will provide additional indices to track changes in the respective bighorn populations, and ensure compliance with State law requiring that tags shall not be allocated for more than 15 percent of the total estimated ram population in each management unit (Section 4902, Fish and Game Code). This method is conservative in that only the number of individuals available to be seen within the visibility range of the helicopter are estimated (Graham and Bell 1989).

In September 2002, the Department conducted a census of bighorn sheep in the San Gorgonio Wilderness. The age and sex composition of bighorn sheep observed was 18 ewes, 5 lambs, and 6 rams for a total of 29 animals. Based on the number of animals actually observed during that survey, 15 percent of number of rams observed would have resulted in the proposed issuance of no general tags. The zone was, however, left open for the purchaser of the special fund-raising tag, but no sheep was harvested there.

In September 2003, the Department again conducted a census of bighorn sheep in the San Gorgonio Wilderness. The age and sex composition of bighorn sheep was 16 ewes, 1 lamb, and 15 rams. Following the results of that survey, the Department's recommendation was to implement a similarly conservative harvest strategy for the 2003 season. A subsequent survey conducted in January 2004, however, yielded observations of 19 females, 8 lambs, and 38 males. Based on the results of that survey, the Fish and Game Commission adopted regulations providing for the harvest of 2 mature

males from this management unit during the 2004 season, with the potential for a third to be harvested by the purchaser of the fund-raising license tag. It is expected that no more than two mature males will be harvested in this zone, because the purchaser of the fund-raising tag opted to not hunt in the San Gorgonio Wilderness.

The Department was unable to complete a survey of the San Gorgonio Wilderness during Autumn 2004 but, based on the results of the January 2004 survey, recommends the allocation of 1 general license tag, and leaving the option open for purchasers of the fund-raising license tags to hunt there.

The San Gorgonio Wilderness was a new hunt zone in 1996. However, based on information gathered through the bighorn sheep hunting seasons during 1987-1999, hunter success is expected to be high. It has ranged from 67 to 100 percent. Therefore, for the purposes of analyzing the effects of the harvest, it will be assumed that all the tagholders will be successful. Additionally, because the open-zone fund-raising tagholders may elect to hunt in this zone, the effects of this potential harvest of additional rams will be assessed. Because tags will be issued for mature males only, the removal will consist entirely of adult males.

Results of the January 2004 survey yielded observations of 38 rams and 19 females, indicating a sex ratio strongly skewed towards the male cohort, and an absolute minimum population of 57 adult animals. Previous Department estimates (Brennan July 1994 Department memo summarizing aerial survey results; Torres et al. 1996) have estimated this population of bighorn sheep at 100-150 individuals. For the purposes of this evaluation the minimum number of 57 animals from the January 2004 survey will be used. Therefore, we know that 38 males are present in the hunt zone, and that number very likely is conservative relative to the true number of males present in the zone. Average sex ratios derived during fall aerial surveys conducted during the past 3 years yield an estimate of 63 rams/100 females. Using information from January 2004, the total population of *adults* estimated to be present in the San Gorgonio Wilderness Hunt Zone is 98 [(38/.63) + 38]. The take of 1 male sheep would lower the sex ratio to 61 rams/100 ewes, and the take of 3 male sheep would lower the sex ratio to 58 rams/100 ewes. Both of these values are substantially higher than the management objectives of 40 rams/100 ewes recommended in the management plan (Thompson, Yparraguirre, and Bleich 1991) for this zone. Further, the Department successfully reestablishes bighorn populations with sex ratios as low as 33 rams:100 ewes.

Although the proposed project may result in the death of up to three mature male bighorn sheep if both holders of fund-raising tags are successful, this level of hunting mortality will not have a significant negative effect on the local population. If no other demographic changes occur in the population and the holder of the general tag successfully harvests a ram in this zone, that harvest (one ram) would represent 2.6 percent (1/38) of the minimum number of males known to be present in the zone. If the efforts of both fund-raising tagholders result in the harvest of 2 additional rams in this zone, that harvest level (three rams) would represent 7.9 percent (3/38) of the minimum number of rams known to be present in this zone. These levels both are well below the harvest level (15 percent) authorized in Section 4902, Fish and Game Code and, therefore, comply with State law.

The September 2002 aerial surveys recorded a low lamb count with respect to the number of observed ewes (11 lambs;100 ewes). Although the January 2004 survey yielded observations of 38 male sheep, there has been a general downward trend in observation rates of bighorn sheep in this zone, possibly a reflection of changes in sheep distribution that resulted from a series of wildfires during the past several years. To be conservative, however, the Department is recommending that one general tag, rather than two, be issued for this zone.

Sheep Hole Mountains Bighorn Sheep Hunt

The current hunt in the Sheep Hole Mountains will be conducted throughout the main mountain mass and surrounding alluvials. Bighorn sheep of both sexes move freely throughout the management unit. Movements of telemetered individuals have been recorded bighorn sheep moving across Sheep Hole Pass to the Bullion Mountains. Other monitored movements included a collared ram that moved to the Coxcomb Mountains. Additionally, movements by both rams and ewes occur within this management unit between the Calumet Mountains and the Sheep Hole Mountains. Frequent inter-mountain movements between these mountains suggest that these subpopulations of bighorn sheep represent a larger metapopulation, and management direction should be to minimize obstructions to movement corridors (Bleich et al. 1990b, Bleich et al. 1996).

The intermountain movements occur with regularity, and this interaction is consistent with the long-term conservation of the subspecies (Schwartz *et al*. 1986, Bleich

et al. 1990b, Bleich et al. 1996). Given the current amount of use occurring in the Sheephole Mountains by hikers, backpackers, upland game hunters, and miners with no significant effects detected, no effect on movements of bighorn sheep, nor on use patterns within the management unit, are expected to occur as a result of the hunt.

On 4 October 2004, the Department conducted a census of bighorn sheep in the Sheep Hole Mountains. The age and sex composition of bighorn sheep was 38 ewes, 15 lambs, and 24 rams. Based on the number of animals actually observed during this survey, 15 percent of the number of rams observed would result in the proposed issuance of license tags for three mature rams (24 x .15 = 3.6). The Department proposed the issuance of 2 license tags.

The removal of bighorn sheep for translocation purposes did not occur in 2004.

The Sheep Hole Mountains was a new hunt zone in 2000, and hunter success has ranged from 0 to 100%. For the purposes of analyzing the effects of the harvest, it will be assumed that all the tag holders will be successful. This zone is not considered a preferred zone. It is very unlikely that any fund-raising tag holders will choose to hunt in the Sheep Hole Mountains. Nevertheless, because the open-zone fund-raising tag holders may elect to hunt in any zone, the effects of the potential harvest of two additional rams will be assessed, and will consider the impact of two additional fund-raising tagholders. Because tags will be issued for mature males only, the removal will consist entirely of adult males.

In 2002, the Department surveyed this hunt zone using the double-count methodology described by Graham and Bell (1989). This method was implemented to augment our existing survey data and to provide a better estimate of the percentage of the bighorn population observed. The estimates derived through this method will provide additional indices to track changes in the respective bighorn populations, and ensure compliance with state law requiring that tags shall not be allocated for more than 15 percent of the total estimated ram population in each management unit (Fish and Game Code Section 4902). This method is conservative in that only the number of individuals available to be seen within the visibility range of the helicopter are estimated (Graham and Bell 1989). For example, many groups of bighorn sheep are not seen because they were not covered by the helicopter flight transects.

In 2004, Pauli (October 13, 2004, CDFG memo summarizing aerial survey results) estimated that the 77 bighorn sheep observed constituted 88 percent of the animals available to be seen within the visibility polygons of the transect, in which it was estimated that there were 87 bighorn sheep available to be seen. Based on the observed sex ratio of 82 males/100females, Given that the 24 rams observed constituted less than 88 percent of those available to be seen, and even less than were present in the entire management unit, the proposed allocation of 2 tags in the Sheep Hole Mountains Management Unit is in compliance with State law.

Given that the number of animals actually counted represented less than eighty-eight percent of the animals present, we can estimate the population to include a minimum of 87 bighorn sheep. For the purposes of fully assessing the potential impacts of removing two mature rams, this minimum population estimate will be used. Using the three year averaged sex ratio of 65 rams:100 ewes, we estimate that 30 percent of the population is rams (56/185=.302), where 56 and 185 represent the relationship between numbers of rams and total population, respectively. Using those values, and the estimated number of animals available to be seen in the visibility polygons, we can estimate the population to contain a minimum of 36 rams and 55 females.

Given the averaged (3 year) lamb recruitment ratio (50 lambs:100 ewes), the population can be considered to be increasing. The sex ratio of 65 rams:100 ewes is similar to the 65-70:100 commonly seen in unhunted populations (Aldous 1957, Leslie and Douglas 1979, Holl and Bleich 1983 and many others).

Although the proposed project may result in the death of 2 mature male bighorn sheep in the Sheep Hole Mountains, this level of hunting mortality will not have a significant negative effect on the local population. Indeed, if no other demographic changes occur in the Sheep Hole Mountains during 2004, the removal of two mature ram would not lower the sex ratio substantially. Additionally, if fund-raising tag holders harvests two rams in this management unit, the resulting sex ratio would be 58 rams:100 ewes. This ratio remains similar to the 65-70 commonly seen in unhunted populations and is higher than the minimum of 40:100 called for in the Sheep Hole Mountains Herd Management Plan (Pauli and Bleich 1988).

The proposed harvest of 2 rams represents 5.6 percent of the estimated ram population (2/36= 0.555). If fund-raising tag holders successfully harvest rams in this

zone, this potentially raises the total number of harvested rams to 4. This harvest level (4 rams) would represent 11.2 percent of the estimated ram population 4/36 = 0.112). Both of these levels are well below the harvest level (15 percent) authorized in Section 4902 of the Fish and Game Code.

The September 2004 aerial surveys recorded a good lamb count with respect to the number of observed ewes (39 lambs:100 ewes).

White Mountains Bighorn Sheep Hunt

The existing hunt in the White Mountains will be conducted only in the northern portion of the management unit, and will not include the Silver Canyon herd. Bighorn sheep of both sexes move freely throughout the management unit. The movements between subpopulations occur with regularity, and this interaction is consistent with the long-term conservation of the subspecies. Given the current amount of use occurring in the White Mountains by hikers, backpackers and upland game hunters with no significant effects detected, no effect on movements of bighorn sheep, nor on use patterns within the management unit, are expected to occur as a result of the hunt.

In August of 2004 the Department conducted a census of bighorn sheep in the White Mountains. The age and sex composition of bighorn sheep in the Silver Canyon herd was 24 ewes, 5 yearling females, 1 yearling male and 14 lambs. The White Mountain Peak and Montgomery Peak herds were surveyed over 2 time intervals, from 21 to 23 July 2004 and again from 4 to 6 August 2004. During the first period, a minimum count of 189 sheep was conducted, consisting of 97 ewes, 10 yearling females, 12 yearling males, 49 lambs and 14 mature rams. The estimated young:female ratio for the White Mountain Peak and Montgomery Peak herds combined was 46 per 100 females. The male:female ratio was 36 per 100 females, and was obtained during a period of extreme sexual segregation. The August survey accounted for 237 bighorn sheep including 40 rams. The sex and age classes of approximately 35% of the total counted animals could not be ascertained thus the proportion of males or young among these animals was not calculated.

Schroeder (2004) tallied a total of 30 observations of bighorn sheep during his surveys and, after correcting for replicate sightings, placed the minimum number of

individuals in the range at 277, of which 239 were classified as 136 females, 40 males, and 63 young-of-the-year. Schroeder's (2004) results were obtained during a period of sexual segregation, when males and females largely occur in different habitats (Bleich et al. 1997) and, as a result, yield a sex ratio that is biased downward with respect to the proportion of males in the range. When that bias is controlled for (by assuming a conservative ratio of 70 males per 100 females in an unhunted population; Wehausen 1983), a minimum of 294 bighorn sheep are estimated to inhabit the White Mountains, not including 38 unclassified animals (Schroeder 2004). These data indicate in excess of 300 sheep inhabit the White Mountains. Using a sex ratio of 70 rams:100 ewes that is typical of an unhunted population, we estimate that the population contains a minimum of 95 rams and 136 females.

The White Mountains will become a new hunt zone in 2005. Hunting success is likely to be high because of the high availability of animals although there is little information currently available to support this. Therefore, for the purposes of analyzing the effects of the harvest, it will be assumed that all the tag holders will be successful. Additionally, because the two open-zone fund-raising tag holders may elect to hunt in any zone, the effects of the potential harvest of two additional rams will be assessed. This zone is considered a preferred zone, and it is likely that fund-raising tag holders will choose to hunt in the White Mountains. Because tags will be issued for mature males only, the removal will consist entirely of adult males.

The estimated ratio of 70 rams:100 ewes is typical of that commonly seen in unhunted populations (Aldous 1957, Leslie and Douglas 1979, Holl and Bleich 1983 and many others). Although the proposed project may result in the death of up to 5 mature male bighorn sheep in the White Mountains, this level of hunting mortality will not have a significant negative effect on the local population. Indeed, if no other demographic changes occur in the White Mountains during 2005, the removal of three mature rams would not lower the sex ratio substantially. Even if fund-raising tag holders harvest rams in this management unit, the resulting sex ratio would be 66 rams:100 ewes. This ratio remains similar to the 65-70 commonly seen in unhunted populations and is higher than the minimum of 30:100 called for in the White Mountain Herd Management Plan

(Ellsworth et al 2004).

The proposed harvest of 3 rams represents 3.1 percent of the estimated ram population (3/95 = 0.031). If fund-raising tag holders successfully harvest rams in this zone, this potentially raises the total number of harvested rams to 5. This harvest level (5 rams) would represent 5.3 percent of the estimated ram population (5/95 = 0.053). Both of these levels are well below the harvest level (15 percent) authorized in Section 4902 of the Fish and Game Code.

IMPACTS ON THE SOCIAL STRUCTURE

Bighorn sheep demonstrate pronounced sexual segregation (rams and ewes separate) during the majority of the year (Bleich et al. 1997). During periods of segregation, competition between the sexes for food and water is limited or nonexistent. In order for density-dependent responses to occur, a reduction in competition between males and females and the offspring of those females must occur if the population size is limited by the habitat. The removal of so few rams, that likely do not compete with females and young to any appreciable extent, is unlikely to result in a significant increased recruitment of young animals into either population.

The proposed action may increase the current hunter harvest by one ram in the Sheephole Mountains and, therefore, decrease the ratio of rams:ewes in that zone. Further, the proposed action may increase the survivorship of lambs in that population, but such is unlikely, given that males and females live separately for the majority of the year. Moreover, the translocation of over 50 bighorn sheep from the Marble Mountains from 1983-85 did not result in a measurable response (Wehausen 1988). Thus, it is unlikely that the removal of a small number of rams from the proposed hunt zones will result in a measurable increase in lamb recruitment.

Although 222 animals have been removed from Old Dad Peak for translocation purposes since the early 1980s, the population has continued to expand. Recruitment rates have been very high in that population (Wehausen et al. 1987a, 1987b, and 1992; J. D. Wehausen, unpublished data; Bleich 1986). Further, the possibility exists that improved habitat conditions, resulting from an aggressive water development program, have produced the high recruitment rates in that population (Bleich 1983). The removal of less than nine percent of the total number of rams present in the population is not

expected to result in an appreciable increase in recruitment rate.

The percentages of legal rams, as a function of total rams seen during current year surveys, have been summarized for all of the management units in Table 4-1 (V. C. Bleich and A. M. Pauli, unpublished survey data).

TABLE 4-1
Percentages of Legal Rams Seen During Fall Aerial Surveys

HUNT ZONE	Average % Legal Rams 1992-1995	Average % Legal Rams 1996-1999 Legal Rams 1995
Zone 1 - Marble/Clipper Mountains	69.3	72
Zone 2 - Kelso Peak/Old Dad Mountains	79.1	81
Zone 3 - Clark/Kingston Mountain Ranges	74.8	79
Zone 4 -Orocopia Mountains	84.3	46.1
Zone 5 -San Gorgonio Wilderness	71.8	65.7
Zone 6 -Sheep Hole Mountains	78.2	82
Zone 7 -White Mountains	NA	67.5

These values are consistent with a low mortality rate and the conservative hunting removal rate occurring in the respective management unit. Differences in mean ratios and recent values likely are artifacts of sample size and the influence of recruitment rates that, when high, yield a larger proportion of young (but, not legal) rams in the population and, thereby, decrease average percentage of legal rams. Moreover, recruitment of young rams results in an increase in the associated standard deviations for each zone. Torres et al. (1994b), in their analysis of hunter harvest, did not detect any significant ($p>.05$) decreasing age or size patterns of bighorn sheep harvested from 1987-1992. Therefore, the removal of a limited number of mature rams is not expected to have any significant impact on the age structures of the ram populations in any of the proposed hunt zones.

Geist (1975) expressed concern over the potential affects of aircraft disturbance on bighorn sheep. Krausman and Hervert (1983) indicated that 41 percent of 32 mountain sheep that they evaluated were "disturbed" by fixed-wing aircraft. In an effort to evaluate the effects of helicopter surveys on bighorn sheep, Bleich et al. (1990c) and Bleich et al. (1994) conducted experiments to evaluate mountain sheep responses to aerial surveys used in generating harvest quotas. In essence, they noted a temporary displacement of individual bighorn sheep immediately following an aerial survey. Further, they noted that many bighorn sheep took flight at the approach of the helicopter, a phenomenon not uncommon to many species of wildlife. No differences occurred in distances moved by females in steep versus rolling terrain, and no differences existed in the distribution of bighorn sheep as a result of survey intensity. Bleich et al. (1990c) attributed a lack of difference in response to survey intensities to the extreme noise associated with the helicopter. However, those investigators found that differences existed in responses by female sheep between April and June. It is possible that females with very small lambs (as would be expected in April) moved less than females with larger lambs (as would be expected in June) because of the limited distribution of suitable escape terrain utilized during the birthing period. Bleich et al. (1994) reported that bighorn sheep were neither likely to be acclimated nor sensitized to helicopter disturbance.

A substantial data set, consisting of 3,045 telemetry fixes, was generated from September 1986 - December 1990 (Bleich et al. 1997). These data indicated seasonal shifts in the distribution of male bighorn sheep distribution, consistent with sexual segregation, which is a commonplace among sexually dimorphic ungulates. During that period a total of 14 aerial surveys were flown in the Kelso Peak/Old Dad Mountains Management Unit. Similarly, no changes in the distribution of male or female bighorn sheep in the Marble Mountains or other proposed zones have been noted, where similar intensive surveys have been ongoing since 1986. Aerial surveys are not conducted in the White Mountains because the high elevation ranges occupied by bighorn sheep lend themselves better to ground surveys.

IMPACTS ON THE GENE POOL

Apollonio et al. (1989) found that the removal of the majority of successfully breeding males from a population of lek-breeding fallow deer (*Dama dama*) resulted in a decrease of the overall productivity of the lek. Byers and Kitchen (1988) reported that in

pronghorn (*Antilocapra americana*), the deaths of all mature males during a severe winter storm was followed by a mating system change from territoriality to harem defense, apparently because no males were sufficiently dominant to exclude other males from a territory. Speculation regarding the removal of large, old males of bighorn sheep, a species in which males form a tending bond with estrous females, thus warrants some consideration (Festa-Bianchet 1989).

It has been hypothesized that harvesting older males may remove the "best genes" from populations of bighorn sheep subject to "trophy hunting". Fitzsimmons et al. (1995) reported that horn growth was higher in more heterozygous populations than in less heterozygous rams for the 6th, 7th, and 8th years of life, and that by the end of the 8th year the more heterozygous rams had higher horn volumes than less heterozygous rams. Coltman et al. (2003) reported that *unrestricted* harvesting of large rams has contributed to a decline in the traits that determine trophy quality, and that harvesting that is selective and sufficiently severe might elicit an undesired evolutionary response when the target trait is heritable. Nonetheless, selection of large males may facilitate copulations by younger, smaller-horned males that may not encounter breeding opportunities in the presence of large males. Resultant breeding by subdominant, smaller-horned males may increase the ratio of effective population size to census population size and, thereby, increase total genetic diversity (Singer and Zeigenfuss 2002). Further, the consequences of declines in genetic diversity have been questioned with respect to their demographic influences. Indeed, bighorn sheep that have been severely impacted by population bottlenecks and have resultant low genetic diversity appear not to be impacting the potential of those populations to recover in size (Wehausen and Ramey 2004). In contrast to the situation described by Coltman et al. (2003), harvest proposals considered in this document are extremely restricted, and remove but a very small proportion of males from the population. Moreover, such limited harvest proposals will not produce the small population sizes described by Wehausen and Ramey (2004).

Geist (1971) suggested that, if mortality of older males was related to rutting activity, younger males should be expected to suffer greater mortality if allowed to participate in the rut (a result of the absence of older males). Indeed, Heimer (1980), Heimer et al. (1984), and Heimer and Watson (1986) suggested that the removal of most older (and larger) males by hunters would result in lowered survival of young rams. Moreover, Heimer et al. (1984) reported that natural survival of Dall sheep (*Ovis dalli*) males aged four to eight years was lower in areas with greater hunting pressure and a

less restrictive definition of legal males.

Murphy et al. (1990), in a specific test of Heimer's predictions, found no support for the hypothesis that reducing the number of older males has an adverse effect on the survival rate of young males. Similarly, other studies of *Ovis spp*. (Stewart 1980, Hoefs and Barichello 1984) have failed to find evidence of depressed survival of young rams in heavily hunted populations. The strongest support for the hypothesis is Heimer et al.'s (1984) study of the high rate of disappearance of young rams that had been trapped and marked in a hunted population. However, (Murphy et al. 1990) concluded that the disappearance of young rams could be explained by dispersal and reduced sightability, rather than by reduced survivorship. Rams tend to move over greater areas, and their absence in areas they occupied as lambs does not mean they died. Further, Whitten (2001) concluded that sheep harvest trends were driven largely by weather patterns that affected sheep productivity, survival, and abundance, rathert than by horn curl regulations. The death of a large number of adult sheep would result in evidence in the form of carcass remains. No such evidence, other than lion-killed bighorn sheep, has been found, despite considerable field surveys in both hunt zones.
In lightly hunted populations of Rocky Mountain bighorn sheep and desert bighorn sheep, Singer and Zeigenfuss (2002) concluded that young rams did not expend greater energy than young rams in non-hunted populations, and that there was no detectable affect on survivorship of those young rams. Hence, harvesting of mature males had no affect on survivorship of young rams under light harvest strategies.

The seven populations under consideration in this proposed project are dominated by old, large rams. Indeed, in 2004, the majority of rams observed were three-quarter curl in all of the proposed hunt zones (Table 4-1). Moreover, the low harvest rate should not disrupt the age structure and, hence, the social structure of these populations. An analysis of the hunter harvest indicates that the average age of all rams taken as of 1995 was 8.5 years (N=83, range=4-13 years). This mean age is lower than the life expectancy of a desert bighorn sheep, suggesting that harvests are not particularly concentrated on the oldest rams. Torres et al. (1994b) analyzed and summarized the hunter harvest from 1987 through 1992.

The extremely conservative harvest rates in populations dominated by large, mature males have likely precluded any shift in the age structures or genetic diversity of these populations. With the proposed removal of up to 17 bighorn sheep rams in all of the

proposed hunt zones combined (with a maximum potential of 6 in a single hunt zone), no changes in the age structure of the populations are anticipated, nor are any adverse effects, such as those hypothesized by Heimer and his coworkers, anticipated.

IMPACTS ON HABITAT

The removal of one additional ram from the Sheep Hole Mountains and three from the White Mountains Zone has the potential to slightly reduce the total number of bighorn sheep in the statewide population until the birth of lambs the following spring. Should holders of the fund-raising license tags choose to hunt in those zones, and are successful, a total of 4 animals could be removed from the Sheep Hole Mountains; alternatively, a total of 5 could be removed from the White Mountains. If either of those alternatives were to occur, it is possible that some slight improvement in habitat conditions would result, particularly in those areas utilized primarily by adult males. It is unlikely, however, that any substantial improvement in habitat condition will occur, nor that any increase in recruitment rate will be realized. The proposed removal rate is expected to be too low to result in any measurable change in habitat conditions.

Wehausen et al. (1987b) demonstrated a strong relationship between precipitation and recruitment rates in a Sonoran Desert bighorn sheep population. Similarly, Monson (1960) noted the relationship between precipitation and bighorn sheep populations. Beatley (1974) emphasized the relationship between precipitation and phenological events in Mojave Desert ecosystems, and Wehausen (1988, 1990) noted the apparent relationship between high recruitment in the Marble Mountains in the late 1970s and early 1980s and levels of precipitation. Thus, it is likely that precipitation levels, and not population levels of bighorn sheep, are the primary factors determining habitat conditions in the proposed hunt zones.

EFFECTS ON OTHER WILDLIFE AND PLANT SPECIES

As indicated in the Project Description (Chapter 2), the Orocopia sage (*Salvia greatae*) occurs in the Marble/Clipper and Orocopia mountains. The Orocopia sage is a Candidate 2 species for Federal listing. Due to the fact that the current hunt has resulted in such a small increase in human activity in the Marble and Orocopia mountains (one to three tags), it is not expected that this action will have any negative impacts on the status of the Orocopia sage. The entire Marble/Clipper, and Orocopia mountain ranges are

open to the public on a year-round basis; and the areas proposed for the sheep hunt currently are used for other outdoor recreational pursuits, including rock hounding, upland game hunting, photography, hiking, exploring, bird watching, camping, and general nature appreciation. Due to the existing human use levels in these areas, it is not reasonable to conclude that the allocation of one to two bighorn sheep license tags for up to three months will impact the population of the Orocopia sage.

Seven additional plant species that are considered to be either threatened or endangered by the Federal Government or the State of California occur within the San Gorgonio Wilderness Management Unit. These include Parish's Daisy *(Erigeron parishii),* California dandelion *(Taraxacum californicum),* Bear Valley sandwort *(Arenaria ursina)*, triple-ribbed milk-vetch *(Astragalus tricarinatus)*, Coachella Valley milk-vetch *(Astragalus lentiginosus var coachellae),* Cushenbury buckwheat *(Eriogonum ovalifolium var vineum)*, ash-gray indian paintbrush *(Castilleja cinerea)*, and San Bernardino blue grass (*Poa atropurpurea*). Because the areas where these species occur are open year-round for public use, including hiking, horseback riding, camping, hunting, photography, and bird watching, the low number of bighorn sheep hunters (one to two) make it unlikely that the current hunt would have impacts, individually or cumulatively, that would affect the plant species occurring in these areas.

Two exotic species, feral asses (*Equus asinus*) and domestic cattle (*Bos taurus*) inhabit the Old Dad Peak and Clark/Kingston management units. Feral asses also have been reported near the Orocopia and San Gorgonio Wilderness management units. Competition between these species and bighorn sheep may occur, but competition has not been detected. The removal of bighorn sheep by hunting is not expected to result in a decrease in competition between sheep and the aforementioned species, nor is it expected that an increase in the numbers of either species would occur as a result of the removal of a limited number of bighorn sheep rams.

One native ungulate, the mule deer (*Odocoileus hemionus*), occurs in small numbers in the eastern part of the Old Dad Peak Management Unit. Since 1978, only one deer has been observed in the area that will be open to hunting. Mule deer are found throughout the Clark/Kingston, Orocopia, and San Gorgonio Wilderness management units. No impact on the existing deer population is expected as a result of the removal of a limited number of bighorn sheep from the respective management units.

No exotic nor other native ungulates currently inhabit the Marble or Clipper Mountains. Therefore, no effect on other large, grazing mammals is anticipated as a result of the removal of a limited number of bighorn sheep from the Marble Mountains.

Large mammalian predators occasionally prey on bighorn sheep. One aerial predator, the golden eagle (*Aquila chrysaetos*), also is known to take an occasional lamb. Mountain lions (*Felis concolor*), coyotes (*Canis latrans*), and bobcats (*Felis rufus*) are all capable of preying on bighorn sheep. Four confirmed mountain lion kills have occurred in the Kelso Mountains, and three suspected coyote kills have been located there. Mountain lions, bobcats, and coyotes, as well as golden eagles, are all found at Old Dad Peak, the Clark/Kingston mountains, and the San Gorgonio Wilderness. No evidence of mountain lions has been detected in either the Marble/ Clipper, or the Orocopia Mountains. Currently, all available evidence (Bleich, unpublished data) suggests that the mountain lions that killed the sheep in the Kelso Mountains were individuals with large home ranges that encompass many nearby mountain ranges. From 1991 through 1994, six bighorn sheep are known to have been killed by mountain lions in the Clark/Kingston Mountains (Jaeger 1994). Monitoring efforts in the San Gorgonio Wilderness since 1993 indicate that several bighorn sheep have been killed by mountain lions (Schaefer and Torres 1998). Since bighorn sheep are numerous in all the proposed hunt zones, it is unlikely that the removal of a limited number of mature bighorn sheep rams will have an impact on the predators occupying those areas. The large predators discussed are opportunistic feeders; and, based on field observations, sufficient alternate prey sources are available for their consumption in the form of rabbits, hares, rodents, and other species.

As indicated in the Project Description (Chapter 2), the desert tortoise occurs in all of the proposed hunt zones. The desert tortoise is classified as threatened by the State and the Federal Government. The entire area of these management units is open year-round for public use, including hunting, bird watching, camping, photography, rock hounding, and limited vehicle use. The desert tortoise occurs primarily in wash areas and on alluvial plains, areas that will not be impacted by sheep hunters. The low number of sheep hunters that will hunt in the hunt zones, coupled with the differences in habitat types used by desert tortoises and bighorn sheep, make it unlikely that adding one additional tag for the Kelso Peak/Old Dad Mountains Zone would have impacts, individually or cumulatively, that would negatively affect the desert tortoise.

Additionally, as indicated in the Project Description (Chapter 2), there are nearby records of Swainson's hawk and least Bell's vireo. Swainson's hawk is a State-listed threatened species, and least Bell's vireo is a federally and State-listed endangered species. Based on existing levels of human use in the Old Dad Peak Management Unit, it is unreasonable to conclude that the presence of two sheep hunters (three, if the open-zone fund-raising tagholder hunts in this zone) spread over the entire hunt zone will impact the habitats of these species. Swainson's hawks have been occasionally reported near the management unit, primarily as migrants. However, Johnson et al. (1948) reported a nest in a Joshua tree near Cima, many miles east of the hunt zone, in 1938. It is unlikely that a slight increase in human use during the hunt period will have any negative impact on this species. Least Bell's vireos have been reported near the Old Dad Peak Management Unit. However, riparian habitat, on which this species is dependent, does not occur within the management unit. Therefore, no adverse impacts to the least Bell's vireo are anticipated as a result of implementation of this project.

Two riparian bird species and two additional reptile species that are considered to be either threatened or endangered by the Federal Government or the State of California occur within the San Gorgonio Wilderness Management Unit. These include the least Bell’s vireo, willow flycatcher, and Coachella Valley fringe-toed lizard. These bird species are associated with riparian areas, and the reptiles are associated with desert and transitional habitats. Both of these areas are open year-round for public use, including horseback riding, camping, hunting, photography, and bird watching.
Therefore, the low number of bighorn sheep hunters make it unlikely that the proposed project would have impacts, individually or cumulatively, that would affect bird or reptile species occurring in these areas.

Plant and animal species that are considered to be either threatened or endangered by the Federal Government or the State of California that occur within the management units are listed in Appendix 3.

The potential exists for increased human activity in the project areas as a result of proposed bighorn sheep hunting. The presence of hunters, their guides, and other individuals interested in the hunting activity could increase the potential for disturbance of threatened and endangered species. The desert tortoise and sensitive plants would be most vulnerable to this type of impact. However, since the number of general license hunters would not exceed a maximum of twenty-two in all hunt zones (ie. Marble/Clipper

Mountains, Kelso Peak/Old Dad Mountains, Clark/Kingston Range, Orocopia Mountains, San Gorgonio Wilderness, Sheep Hole Mountains, and White Mountains), the relatively low densities of human use associated with the hunt are not expected to cause significant effects. Vehicular travel will be restricted to designated areas pursuant to BLM, NPS, and USFS wilderness requirements. This, combined with the tendency for sheep hunters to set up camps and hunt areas away from one another, should prevent concentrated activities in the project areas.

Bighorn sheep hunters typically use bullets that contain lead. Recently, research has shown that some wildlife species may have been poisoned by consuming lead while scavenging carcasses. Lead poisoning has been a chromic and significant cause of migratory bird (primarily waterfowl) mortality associated with hunting in some areas of North America. Birds ingest spent lead shotgun pellets and scavengers may ingest fragments of led bullets in carcasses or gut piles (Fry 2003). The ingested lead is converted to soluble form, and absorbed into tissues, which can have lethal effects. Secondary poisoning of predatory birds can also occur when they feed on birds carrying lead pellets embedded in body tissues (Fry 2003). The USFWS has mandated the use of nontoxic shot for waterfowl hunting. The use of nontoxic bullets is not required for the hunting of bighorn sheep, although deer and wild pig hunters in the condor range are urged to use nontoxic bullets.

Bighorn sheep hunter density is extremely low. In addition, hunters usually only fire at a selected animal, and losing a wounded animal is unusual. The dispersed hunting effort and resulting scattered, limited bullet deposition over vast acreage make it unlikely that lead bullets would ever become concentrated enough to present any significant hazard to wildlife. California condors do not exist in any of the bighorn sheep hunting zones. Therefore, the Department does not believe that the use of lead bullets for hunting bighorn sheep will result in any significant adverse environmental impacts.

EFFECTS ON RECREATIONAL OPPORTUNITIES

Hunting Opportunities

The proposed action would authorize one additional hunting opportunity for taking a Nelson bighorn sheep ram in the Kelso Peak/Old Dad Mountains. This will be the 17th such hunt in as many years. Previous hunts occurred in the Kelso Peak/Old Dad Mountains in 1987 through 2003. The proposed action would result in a maximum of one additional hunter participating in this unique outdoor experience. The demand for bighorn sheep hunting opportunities in California, and worldwide, is extremely high (Table 4-2).

TABLE 4-2
Number of Bighorn Sheep Applicants (1987 - 2004)

Year	Applications Received
1987	**4,066**
1988	**3,385**
1989	**3,185**
1990	**1,591**
1991	**2,834**
1992	**3,798**
1993	**4,318**
1994	**4,692**
1995	**4,217**
1996	**4,493**
1997	**3,925**
1998	**4,853**
1999	**5,058**
2000	**5,445**
2001	**5,754**
2002	**7,147**
2003	**7,697**
2004	

In 2004, all applicants for bighorn sheep tags pay a $7.00 nonrefundable application fee just to enter the drawing, and they must possess a California hunting license. Additionally, a total of $1,504,500 has been received through the auction of one tag in each of the years 1987 through 1993 and two tags in each year from 1994 through 1996. Only one fundraising tag has been auctioned in 1997 through 2000, two in 2001, two in 2002 and 2003, and one in 2004. Revenue generated from hunting Nelson bighorn sheep is summarized in Table 2-1. The proposed action will positively impact the hunting public of the State by providing hunting opportunities consistent with sections 203.1 and 4902, Fish and Game Code, and the State's wildlife conservation policy, contained in Section 1801, Fish and Game Code (Appendix 1).

There will be overlap of upland game (quail and chukar), rabbit, and deer hunting seasons in some of the hunt areas. However, due to the low numbers of sheep hunters in each area, coupled with the large areas open to hunting, it is unlikely that sheep hunters will affect hunters of other species of wildlife in terms of hunter success or quality of experience.

Nonhunting Opportunities

The non-hunting users of the bighorn sheep resource (viewing, nature study, research, photography) are not expected to be significantly impacted by the take of up to 11 mature bighorn sheep rams from a statewide population of approximately 3,600 animals. The proposed action is not expected to impair the non-consumptive user's ability to enjoy the outdoors, the bighorn sheep resource, or its habitat; because the non-hunting user will have opportunities to view bighorn sheep in unhunted situations indefinitely. Bighorn sheep in the Sierra Nevada (*O. c. californiana*) are currently listed as endangered species by the State and Federal Endangered Species Acts. All other populations of Nelson bighorn sheep, except the six being considered for harvest in this document, are classified as fully protected mammals by the Legislature. Bighorn Sheep in the Peninsular ranges are listed as threatened by the State and are federally listed as endangered (1998). No populations of bighorn sheep, will be exposed to hunting as a result of this project. Opportunities for non-hunting uses of those populations will not be affected.

The current hunting regulations action will permit the hunting of bighorn sheep in six limited geographic areas for a short period of time. The non-hunting user will still have the opportunity to enjoy the bighorn sheep in the Marble/Clipper Mountains, Kelso Peak/Old Dad Mountains, Clark/Kingston Mountains, Orocopia Mountains, San Gorgonio Wilderness, and Sheep Hole Mountains regardless of whether a hunt occurs. The non-hunting user can view these sheep 365 days a year. If he/she wishes to avoid viewing the bighorn sheep in these areas during the hunting season, the opportunity to view bighorn sheep in the absence of bighorn sheep hunters could be reduced by up to 90 days. The Commission may consider access restrictions to the hunt zones during the bighorn sheep season under its regulatory authority for wildlife areas in Section 550, Title 14, CCR.

The proposed action to add one additional hunting tag for the Kelso Peak/Old Dad Mountains will not impact the non-hunting public, because the number of hunters in the field at any one time (established by the quotas for each hunt), compared to the areas open to hunting, will result in very low hunter density. Historically, areas open for bighorn sheep hunting have been open for other types of hunting (quail, chukar, rabbit, dove, and deer) during the same time as the proposed sheep hunts. If the non-hunter is concerned about being in the field at the same time as the proposed sheep hunts, there are significantly larger areas of the same habitat type adjacent to the hunt areas that can be used for non-hunting activities during the sheep hunting season.

EFFECTS ON ECONOMICS

The proposed action has the potential to result in an insignificant positive economic effects on communities located near the proposed sheep hunting areas. The discussion below is provided for the Commission and the public's information.

Hunters from outside the local areas would visit the region and purchase goods and services from local merchants. This additional spending will generate retail sales, income, and possibly employment in businesses such as motels, restaurants, and retail stores. Spending effects would be minor, because of the small number of tags sold. Any potential effects would likely be distributed among those communities located nearest to the sheep hunt areas, including Barstow, Baker, Blythe, Cadiz, Morongo Valley, Desert Center, Needles, Twenty-Nine Palms, and Amboy, in Riverside, San Bernardino, Inyo, and Imperial counties.

Fiscal effects include direct public expenditures and revenue generation associated with the proposed project. The project will be administered by the State. Additional revenues will be directly generated by the $6.75 nonrefundable application fee and the $272.50 resident tag fee. In the event that a nonresident applicant is selected, he or she would pay a tag fee of $500, in addition to the nonresident license fee. Further, since one tag is available for auction, as authorized by Section 4902, Fish and Game Code (Appendix 1), there is the potential to generate a substantial amount of revenue from the sale of this tag. Table 2-1 indicates the amount of revenue generated by the sale of fund-raising tags. Total revenues since 1987 equal $2,288,635.75.

Table 4-2 shows the extremely high demand for bighorn sheep hunting opportunities. Assuming a similar demand in 2004, a substantial amount of revenue would be generated between application fees, tags, and the auction of one tag for fund-raising purposes. Revenues generated from the project would be greater than the additional costs to the State to administer the program. All revenues generated as a result of activities associated with bighorn sheep tags must be used solely to benefit bighorn sheep management programs in California, as required by Section 4903, Fish and Game Code (Appendix 1).

Recreational use benefits measure the dollar value that hunters place on having the opportunity to hunt bighorn sheep. These benefits are equivalent to the dollar amount that hunters would be willing to pay for this activity, over and above what they have to pay in expenses (license, application, and tag fees). Because the demand for bighorn sheep tags exceeds the supply, most hunters will not have the opportunity to hunt bighorn sheep. If provided the opportunity, however, the activity value to hunters would be measured as their collective or aggregate willingness to pay, less the cost required to participate. Although no data are available to measure the recreational use benefits associated with the proposed project, the existence of these benefits should be recognized.

GROWTH-INDUCING IMPACTS

The vast majority of bighorn sheep herds in California occur on lands administered by BLM, USFS, and NPS. The Department, in cooperation with these land management agencies, is working diligently to protect existing bighorn sheep habitat, to initiate habitat improvement projects where they will be beneficial to bighorn sheep, and to restore bighorn sheep to historical ranges from which they have been eliminated. These agencies have habitat improvement and acquisition plans in place and are working jointly on behalf of California's bighorn sheep resource. The long-term outlook for bighorn sheep habitat on public lands in California is stable to improving.

No more than 11 hunters will be using the hunt areas just prior to and during the hunting seasons. They may be accompanied by guides and other nonhunters. Since the hunt zones are primarily public land administered by the BLM under appropriate Federal laws which limit development and alteration of environmental features, it is unlikely that the proposed project will cause growth in the local area. Potential effects would be expected to be limited to a short duration just prior to and during the hunting season.

Local businesses may provide lodging and supplies, but most hunters since 1987 have set up temporary camps in conformance with Federal laws and regulations related to the use of public lands.

EFFECTS ON PUBLIC SAFETY

Since 1987, the Department has not received any reports of bighorn sheep hunting related casualties in California. This does not diminish the fact that people have died or been wounded while hunting other big game mammals, such as deer (Department of Fish and Game, Wildlife Protection Division, 1992). Data for deer indicate that, based on the total number of license hunters in California and the annual number of accidents, there is roughly a 0.000015-0.0000425 probability of being killed or wounded while hunting since 1975. Additionally, Department records show that no nonhunting injuries or deaths have occurred as a result of bighorn sheep hunting. As with any outdoor activity, there is always a risk of injury or death. However, the probability of being injured while hunting bighorn sheep is extremely low. This good safety record is due, in part, to the requirement that all hunters must successfully pass a hunter safety education course prior to receiving a hunting license.

SHORT-TERM USES AND LONG-TERM PRODUCTIVITY

The proposed project allows one additional hunter, bring the total potential harvest of 11 adult male bighorn sheep for all hunts. Hunter success is expected to be high (67-100 percent). This short-term use will impact long-term productivity by removing individuals, thereby reducing competition for forage. However, given the extremely limited harvest of 11 bighorn sheep from six mountain range complexes, any reduction in intraspecific competition would be negligible.

If the proposed project were delayed, no significant long-term impact on the population would be expected. However, this delay would eliminate the proposed one tag additional to the public hunting element as part of the Department's bighorn sheep management program, and would not address the high demand for more recreational hunting opportunities involving bighorn sheep. In 2003, 7,697 individuals applied for Nelson bighorn sheep tags.

The proposed action of removing no more than 11 mature Nelson bighorn sheep rams by hunting should not have a significant long-term adverse impact on either the specific populations to be hunted or on the statewide population of bighorn sheep (see Impacts of Hunting on the Species Populations).

CUMULATIVE IMPACTS

Although the proposed project provides for one additional hunter for mature bighorn sheep rams in the Kelso Peak/Old Dad Mountains. It is reasonably foreseeable that, if this project is approved, the Commission would consider and may approve additional hunts in the future. Since the statutorily mandated regulation process involves review at least once every three years, and data are collected by the Department during each year. Appropriate, biologically sound recommendations would be presented by the Department to the Commission prior to consideration of any future hunt.

Section 207, Fish and Game Code (Appendix 1), requires that the Commission at least once every three years review and consider revisions to regulations relating to mammals. This law requires that the Commission receive recommendations regarding mammal hunting regulations from Commission members, its staff, the Department, other public agencies and the public. The process is comparable to the Commission establishing specific harvest quotas for deer, elk, and pronghorn antelope seasons annually. The system has worked well over time in adjusting the hunting program to maintain healthy populations of the aforementioned species.

After a thorough evaluation of the proposed project over time and in conjunction with other related past, present, and reasonably foreseeable future projects, the Department has concluded that there will be no significant adverse cumulative effects on the State's bighorn sheep resource. This determination was based upon a careful analysis of the potential environmental impacts of this project, together with other projects and/or actions.

This finding was made based, in part, on the following:

1. The proposed project calls for adding one additional bighorn sheep tag in the Kelso Peak/Old Dad Mountains, at levels that are well below 15 percent of the mature rams, as defined in Section 4902, Fish and Game Code. Hunting is not

expected to have a significant negative long-term effect on the population size. The proposed project is consistent with the State's Wildlife Conservation Policy contained in Section 1801, Fish and Game Code.

2. The continued monitoring of harvest trends and population parameters of the populations, along with the Department and the Commission's regulation-setting process, involves an annual review of the status of the State's bighorn sheep resource. After careful evaluation of the population and any changed environmental circumstance, this process will provide for adjustments in bighorn sheep hunting regulations necessary to assure the health and viability of the bighorn sheep populations.

Effects of Habitat Loss and Degradation

The proposed project, in combination with current bighorn hunts and other factors, is not likely to cause habitat loss and degradation. Only 11 hunters, their guides, and selected individuals will participate in the bighorn sheep hunt. Given the relatively low densities of human use, any habitat loss and degradation by hunters would be negligible.

Changes in habitat are not expected to be significant in the project areas in the foreseeable future. Most of the land in all of the management units is administered by BLM, NPS, or USFS. In 1994, a legislative act entitled "California Desert Protection Act of 1994" (S. 21) passed Congress and designated wilderness areas and wilderness study areas to be administered by the BLM and NPS throughout the deserts of southeastern California. Most of the areas of greatest bighorn sheep use in the proposed hunt areas are now designated as wilderness and are administered accordingly by the BLM, NPS, or USFS. Areas designated as wilderness will have the habitat within protected in perpetuity or until Congress determines that other values exceed those associated with wilderness classification. Therefore, the cumulative environmental impact of habitat loss and the proposed project will not be significant.

Effects of Drought

Drought can have an impact on local populations of bighorn sheep. In fact, drought conditions have contributed to the observed poor lamb recruitment rates in 1994 and 1996. Although there is some speculation that drought conditions have resulted in

the elimination of localized populations of bighorn sheep (Weaver et al. 1969), drought conditions are a natural occurrence with which bighorn sheep have been faced throughout their evolutionary history. Further, drought conditions are generally localized, both spatially and temporally. Thus, the possibility of drought impairing the bighorn sheep population on a statewide basis is unlikely. It is anticipated that the statewide population will remain in a healthy, viable condition, even though dynamic weather patterns may affect some populations in some years.

Evaluation of bighorn sheep performance and habitat conditions and trends is an ongoing facet of the Department's bighorn sheep management program. Information collected by the Department and other sources will be utilized to modify any future recommendations for hunting proposals or to recommend other management activities, such as habitat improvement or acquisition. The impacts, if any, of a catastrophic event on bighorn sheep populations would be addressed in any future management activities. In addition, the Commission has the regulatory authority (Section 240, Fish and Game Code) to take emergency action to cancel or suspend hunting of Nelson bighorn sheep in any management unit if a catastrophic event occurred which, in conjunction with a hunting program, could significantly impact those bighorn sheep populations. As described in Chapter 4, the effects of both hunting of mature rams and habitat changes have been monitored in the Marble Mountains and Kelso Peak/Old Dad Mountains (Torres et al. 1994b). Similarly, habitat changes and use with regard to bighorn sheep in the Clark/Kingston Mountains, Orocopia Mountains, San Gorgonio Wilderness, and Sheep Hole Mountains management units have been closely monitored. The Mojave and Sonoran deserts are naturally dry, since they receive very little rainfall. Bighorn sheep, other species of wildlife and their habitats have evolved in an environment where drought is natural. Artificial water catchments have been placed in the areas to supplement natural sources of free water for bighorn sheep to drink. Rainfall generally does not limit drinking water for bighorn sheep but affects forage quantity and quality. Although detailed rainfall data for the hunt zones are limited, the judgment of knowledgeable Department employees familiar with the areas indicate that recent rainfall patterns, combined with the existing and proposed increased hunting of no more than 11 mature rams, will not result in a significant adverse effect on the bighorn sheep populations. The judgment was based on the effects of rainfall and hunting since 1987.

Effects of Wildfires

The sparse vegetation and lack of fuel makes it unlikely that wildfires have the potential to adversely affect bighorn sheep in the hunt zones. However, the San Gorgonio Wilderness occurs in an area of potential wildfires, particularly the winter range. In this area, fire is beneficial to bighorn sheep. Most research has shown burning, especially prescribed burning, to be favorable to bighorn sheep and deer. These fires maintain movement corridors, escape terrain, and provide new herbaceous vegetation. Large mammals, such as deer and bighorn sheep, are able to escape during wildfires (Schaefer, and Torres, unpublished data), as most areas burn in a patchy fashion, even when large areas are burned (Stoddard 1963, Phillips 1965, and Vogl 1967).

Since 1987, when hunting of a limited number of rams began, no major fires have occurred in the areas of greatest bighorn sheep use. However, the Department and the BLM, NPS, and USFS will consider this potential in managing bighorn sheep populations and their habitat.

Effects of Diseases, Road Kills, and Other Mortality

In addition to the factors previously considered, there are no data available to indicate that road kills, disease, predation, or natural mortality factors will act as additive impacts which, along with the mortalities associated with the limited hunting program, will have significant adverse cumulative impacts on local, regional or statewide bighorn sheep populations.

While two populations of translocated California bighorn sheep experienced catastrophic die-offs as a result of exposure to pathogens associated with domestic sheep (Lava Beds, Siskiyou County, 1980; Warner Mountains, Modoc County, 1988), the potential for further contact with domestic sheep, and thus an associated die-off of a localized population, is remote. There are no domestic sheep grazing allotments within any of the management unit boundaries. As part of its ongoing management program of established bighorn sheep populations, the Department routinely takes blood samples to monitor the exposure to various disease organisms. Additionally, BLM has prepared management plans for many areas to minimize any conflicts between bighorn sheep and livestock. The Department has not observed and does not anticipate any significant impacts resulting from disease in combination with the proposed hunting project.

On August 25, 1995, during the monitoring of radio-collared bighorn sheep, two mortalities (17 percent of 12 telemetered ewes) were detected in the Old Dad Mountain population of bighorn sheep. Upon follow-up 12 dead bighorn sheep were found near an artificial drinker in a canyon on the main mountain. Wehausen (December 1995; Department report summarizing die-off) conducted extensive ground surveys and documented a total of 45 dead bighorn sheep (19 lambs, 16 ewes, and 10 rams). Extensive laboratory testing indicated that botulism poisoning from bighorn lambs that fell into, were trapped, died, and fouled the water was the cause (P. Swift 1995; California Department of Fish and Game, Wildlife Investigations Lab, Preliminary findings of bighorn sheep die-off at Old Dad Mountain). As was determined, an open lid to a water storage container attracted and trapped the bighorn sheep lambs. This device was immediately removed and replaced with new tanks that do not have such lids. In many ways, this die-off mimics a previous removal of 49 adult bighorn sheep (30 females, 19 males) from this population for translocation projects in 1992. As after the 1992 translocation project, this bighorn sheep population is expected to increase as recruitment increases. Indeed, the 1995 recruitment of 48 lambs:100 ewes is high. Unfortunately, the loss of bighorn sheep from this poisoning tragedy will delay future population augmentation and reintroduction projects. However, given that only 26 adult bighorn sheep (10 rams) were lost from this population, numerous rams persist to ensure adequate reproduction. Further, population estimates after this die-off have continued to increase, and the proposed hunting project has been determined not to adversely impact this population.

Effects of Illegal Harvest

In recent years, the Department has documented annually approximately one to three cases of bighorn sheep being killed illegally statewide. These incidents have occurred over a large portion of the total area inhabited by bighorn sheep. The verified illegal take involves an extremely low proportion of the State's approximately 3,600 bighorn sheep and is widely distributed. Illegal take does not appear to be a significant factor affecting the population. In 1990, there was one case prosecuted regarding the take of a bighorn sheep. In 1993, there were no poaching incidents reported. In January 1994, one bighorn ewe was illegally killed in the Little San Bernardino Mountains, Riverside County. In December 1994, one bighorn ewe was illegally killed in the Orocopia Mountains, Riverside County. Since the bighorn sheep

outside the hunt zones are either fully protected or State-listed species, detecting and preventing illegal take is a high priority for the Department.

Currently, there are 210 wardens and 46 warden lieutenants assigned to field enforcement statewide (Table 4-3).

TABLE 4-3
Number of Warden and Lieutenant Positions Listed by Region

TABLE 4-3. Number of Warden and Lieutenant Positions Listed by Region/Division									
Class	**Region 1**	**Region 2**	**Region 3**	**Region 4**	**Region 5**	**Region 6**	**OSPR**	**HQ**	**Total**
Warden	26	34	38	28	33	21	13	17	210
Lieutenant	6	9	8	5	8	3	4	3	46
Captain	3	5	3	5	3	3	3	7	32

Effects of Depredation

Regarding depredation to land or property, the Department does not have the authority to issue kill permits for bighorn sheep causing property damage (Section 4181, Fish and Game Code).

WELFARE OF THE INDIVIDUAL ANIMAL

Introduction

Section 203.1, Fish and Game Code, provides as follows: "When adopting regulations pursuant to Section 203, the Commission shall consider populations, habitat, food supplies, the welfare of individual animals, and other pertinent facts and testimony."

Consideration of bighorn sheep populations, habitats, food supply, and other facts pertinent to the anticipated effects of the project on bighorn sheep are contained in this environmental document prepared by the Department in compliance with CEQA. This section deals only with considerations of individual animal welfare. This subject is

discrete and distinct from those included in the CEQA-mandated environmental analysis. It is an additional obligation imposed on the Department by the Fish and Game Code. This section is included in this document for convenience and to permit the public and interested persons to consult a single document in order to read and evaluate the Department's analysis.

Because bighorn sheep inhabit open range, wounding loss is expected to be extremely low. Animals shot do not often escape from the view of the hunter. The bighorn sheep hunt is very closely monitored by the Department. License tagholders are required to attend and successfully complete a mandatory hunter orientation program. Since the hunt began in 1987, wounding loss has not been confirmed.

To the Department's knowledge, there have been no specific scientific studies of wounding effects on bighorn sheep. Therefore, studies done on other large game mammals will be referenced.

Effects of Various Methods of Take (Pain and Suffering)

Bullets

In the case of bullets, it has been determined that centerfire bullets transfer sufficient energy to the animal to cause fatal wounds and traumatic shock adequate to bring about quick death. Despite these performance standards, time to death is affected by shot placement. An animal shot with a gun in the heart-lung area or a critical portion of the central nervous system, such as the brain or spinal cord, will generally die in less than 22.3 seconds, with a range from one to 26.4 seconds (Ludbrook and Tomkinson 1985, p. 13). An animal shot in a less vital area may not die for a considerably longer period of time, ranging from 240 to 360 seconds, depending on the location (Ludbrook and Tomkinson 1985, p. 13). Some shots in nonvital areas wound but do not kill the animal (Benke 1989).

Archery

When the Commission initially authorized the limited hunting of mature bighorn rams in the Marble Mountains and Kelso Peak/Old Dad Mountains areas in 1987, archery

hunting was not provided. As a result of reviewing public recommendations requesting that archery equipment, as defined in Section 354, Title 14, CCR, be authorized for taking bighorn rams, the Commission added this method of take in 1988. Since that time, the Department is aware of only seven tagholders who attempted to use archery equipment to take a bighorn ram. Department records indicate that only three were successful in killing rams in 1988, 1994, and 1996. An interview with the other hunters indicated that they initially attempted to hunt with a bow, were not successful, and ultimately used a rifle to kill a ram. Given that recorded efforts of archery hunting have not resulted in wounding loss, the Department concluded that the use of archery equipment to hunt a limited number of mature bighorn rams would not be expected to cause significant adverse effects on bighorn sheep.

In order to provide the public and various decision makers with the available information on the issue of archery wounding, the pertinent literature on wounding is contained in the Bibliography.

Chase-Related Effects

The project may result in individual animals being chased by hunters. During the bighorn sheep hunt, individual hunters may not be accompanied by a dog or dogs. There is no anticipated project-related impact associated with dogs.

It is possible that an individual bighorn sheep will be chased by hunters. Such a chase would probably cause the animal to suffer anxiety, fear, and stress. Anxiety is generally defined as an unfocused response to the unknown [Journal of the American Veterinary Medical Association (JAVMA 1987)]. Fear is a focused response to a known object or previous experience (JAVMA 1987, page 1,187). Stress is commonly defined as the effect of physical, physiologic, or emotional factors that induce an alternation in an animal's homeostasis or adaptive state.

Stress and its subsequent responses may be categorized in three ways. These are: (1) neutral stress - this form of stress is not intrinsically harmful and evokes responses that neither improve nor threaten the animal's well being; (2) eustress - stress that involves environmental alternatives that in themselves are not harmful to the animal but which initiate responses that may in turn have potentially beneficial effects; and (3)

distress - stress that creates a state in which the animal is unable to adapt to an altered environment or to altered internal stimuli (JAVMA 1987, pages 1,187-1,188).

Animals may experience anxiety and fear in response to naturally occurring stimuli. For example, bighorn sheep are naturally chased by predators. It is assumed that bighorn sheep, if given a choice, would choose not to be pursued. In this sense, pursuit may be viewed as having an adverse effect on individual animal welfare.

The three recognized forms of stress (JAVMA 1987, pages 1,186-1,187) have different manifestations. Eustress is not applicable. The project will not alter the individual bighorn sheep environment. Bighorn sheep have evolved an exceptional physical ability to flee from pursuers. Consequently, pursuit by hunters does not represent a change to the bighorn sheep's natural environment sufficient to prompt further evolutionary responses.

Neutral stress and distress are both potentially relevant and adverse. Neutral stress would be exhibited by an animal fleeing from hunters and would probably continue up to the point at which the pursuit ended. Presumably, the pursuit would end when the animal evaded its pursuers or was shot by the hunter. Effects of wounding is discussed separately.

A pursued animal could experience some degree of distress. The distress could become more acute if the animal were cornered or otherwise became unable to successfully flee. If the stress-inducing stimuli are short-term, the animal's responses should not result in long-term harmful effects. Prolonged or excessive stress may result in harmful responses, such as abnormal feeding and social interaction behavior and lowered reproductive success. It has been reported that long-term distress in animals can result in pathologic conditions, such as gastric and intestinal lesions, hypertension, and immunosuppression (JAVMA 1987, page 1,188).

Both neutral stress and distress may be viewed as adverse effects on the welfare of individual animals. Neutral stress resulting from the project may be different from naturally occurring neutral stress because of the possibility of pursuit by hunters. However, this potential stress is not expected to have any long-lasting effects, because each chase presumably terminates with the bighorn sheep's escape or death. Although

distress is capable of producing long-term adverse effects, the project is not expected to have that result, because the hunting season is of limited duration, and any distress-inducing conditions will be temporary.

Effects of Wounding

Wounding is the most significant adverse effect that the project will have on the welfare of individual animals. As a result of the project, individual animals may be wounded.

Wounding is a generic term that refers to any nonlethal injury (McCaffery 1985). The nature of the specific wounds ranges from superficial to seriously disabling (Nettles et al. 1976, Lohfeld 1979). In many cases, a seriously disabling wound may lead to the animal's death from secondary causes, such as infection or disability that prevents the animal from successfully foraging for food, evading natural predators, or performing other functions necessary to its survival (Nettles et al. 1976). The wounding of animals is an unavoidable result of hunting (see Bibliography for references on archery wounding). Wounding rates vary considerably, depending on the type of equipment used (guns or archery equipment). Death caused as a result of these wounds (wounding loss) varies as well. Some authors suggest that archery wounding rates and loss are as high as 80-100 percent of the legal take (Boydston and Gore 1987, Benke 1989, and Pacelle 1990). Others believe that, while archery wounding rates can be as high as 50 percent of harvest (Downing 1971 and Herron 1984), wounding loss is less than 15 percent (Lohfeld 1979, Herron 1984, Ludbrook and Tomkinson 1985, and Fuller 1990).

The effects of these wounds on the individual animal are the subject of much debate. Benke (1987) states that broadheads are ineffective in killing deer and thus cause much pain and suffering. The contrary view of this effect is offered by Georen (1990a) and Dr. Bruce Stringer (International Bowhunter Educational Manual 1989, pp. 33-34). They believe that lethal wounds result in quick, near painless death due to blood loss. Moreover, Nettles et al. (1976) asserts that long-term suffering resulting from traumatic injury probably affects very few deer.

Existing evidence is inconclusive as to the extent to which archery wounds lead to infection. Benke (1989) and Pacelle (1990) state that a common cause of death is septic infection caused by arrow wounds. They contend that arrows generally inflict dirty wounds, because numerous hair are drawn into the wound. Bacteria from the clipped hairs begin multiplying in the wound channel and eventually cause death.

The Department was unable to identify any scientific studies that have been published that measure or evaluate whether these wounds cause septic conditions. It has been suggested (Georen 1990a), however, that nonlethal wounds cause relatively clean wounds and that such wounds bleed profusely. This results in an inner-cleaning effect before bleeding is impeded by thrombosis, arterial spasm, or coagulation.

Conclusion

It is clear that wounding causes pain. The extent or level of this pain (considering the type of wounds) felt by the animal is unclear, as the information available is inconclusive.

The existing hunting regulations has been designed to limit wounding through the specification of minimum performance requirements for archery equipment and firearms. It is expected that some wounding will nevertheless occur. The methods of take are not 100 percent lethal. Lethality is largely a function of hunter skill and accuracy.

CHAPTER 5. ANALYSIS OF ALTERNATIVES TO THE PROJECT

In addition to the proposed project, the Department is also providing the Commission with one hunting alternative to the proposed project which could feasibly attain the basic project objective of including hunting as an element of bighorn sheep management. The hunting alternative was selected to provide the Commission with two options for hunting. This alternative provides for one tag to be issued in the Marble/Clipper Mountains, one tag to be issued at Old Dad Peak, one tag to be issued in the Clark/Kingston Mountain complex, one tag to be issued in the Orocopia Mountains, zero tags to be issued in the San Gorgonio Wilderness, one tag to be issued in the Sheep Hole Mountains, one tag to be issued in the White Mountains, and one auction tag, which may be used in any area. It allows the use of the latest annual census information to confirm the tag quotas for each area are below the statutory limit of no more than 15 percent of the mature rams. This alternative is based on the premise that the number of tags allocated should be even more biologically conservative than 15 percent of the mature rams estimated during surveys.

In addition, two alternatives which do not include hunting and, therefore, do not achieve the primary project objective are also provided to the Commission. These alternatives are: (1) a "no-hunting" alternative, and (2) relocation of the excess rams proposed to be available for hunting during future translocation projects.

ALTERNATIVE 1 - NO HUNTING

The "no-hunting" alternative would continue other bighorn sheep management activities in a manner similar to that practiced prior to 1987, the initial year that hunting of bighorn sheep in the Marble Mountains and Kelso Peak/Old Dad Mountains was authorized by the State Legislature. This alternative would continue the translocation of bighorn sheep to available historical habitat, just as would occur under the proposed project.

Under the "no-hunting" alternative, the Department would continue to survey bighorn sheep populations and to update management plans as appropriate. Further, the Department would continue in its aggressive programs to re-introduce bighorn sheep to historical ranges and to protect bighorn sheep habitat from other conflicting uses,

consistent with the mandates of the land management agencies. Opportunities for non-hunting uses would remain unchanged, just as they will under the proposed project.

However, up to 4-22 Nelson bighorn sheep rams would not be killed by hunters and, for at least a short period, would be available for non-hunting values. No significant adverse effects to habitat or other species would be expected to result from this alternative.

Under this alternative, it is possible that support for bighorn sheep management programs by interested conservation groups and hunters would decline. This decline could result from reducing the value of bighorn sheep to a segment of the public by unnecessarily preventing the hunting of a limited number of mature rams. These groups have provided support, both politically and financially (Bleich et al. 1982a), for bighorn sheep management in California and have been the primary organized supporters of habitat protection and improvement projects (Bleich 1990a). Without the continuing support of these individuals, it is possible that activities associated with the protection and enhancement of bighorn sheep habitat and the political support for an aggressive translocation program would be reduced. Further, substantial revenues resulting from the sale of license tags and applications would be unavailable for use in bighorn sheep management programs.

ALTERNATIVE 2 - TRANSLOCATE MATURE RAMS IN LIEU OF HUNTING

The translocation alternative would provide that two rams from the Marble/Clipper Mountains, four rams from Kelso Peak/Old Dad Mountains, two rams from the Clark/Kingston Mountains, one ram from the Orocopia Mountains, two rams from the San Gorgonio Wilderness, one ram from the Sheep Hole Mountains and two additional ram from any hunt zone be translocated in lieu of removing them by public hunting. The proposed action would also involve translocation of bighorn sheep, but would not be limited to surplus rams.

As described in the report to the Legislature Regarding Bighorn Sheep Management (Department of Fish and Game 1998), the Department currently has an active and ongoing bighorn sheep translocation program. In fact, it is a Department

objective to re-establish bighorn sheep on historical ranges (Department of Fish and Game 1983), and legislative direction toward that end is provided in sections 4900 and 4901, Fish and Game Code (Appendix 1).

The Department has removed a total of 55 animals from the Marble Mountains and 222 animals from Old Dad Peak in an effort to re-establish populations of bighorn sheep on historically occupied ranges in the Argus Mountains, Eagle Crags, Sheep Hole Mountains, Whipple Mountains, Chuckwalla Mountains, Avawatz Mountains, Bristol Mountains, and Bullion Mountains. Animals have been translocated in ratios of approximately three females to one male, resulting in the high ram ratios remaining in the Marble Mountains and Kelso Peak/Old Dad Mountains. As noted previously, bighorn sheep are polygynous (one male is capable of breeding with many females). Hence, a translocated ram ratio of 33:100 ewes is entirely satisfactory for establishing new populations.

Arguments have been made that excess rams should be moved to other mountain ranges in an effort to preclude the "deleterious effects of inbreeding." However, existing literature on the subject (Schwartz et al. 1986, Bleich et al. 1990b) suggests that populations of bighorn sheep in the Mojave Desert are sufficiently large enough and appropriately located adjacent to one another, with evidence of inter-population movement, to conclude that the majority of the bighorn sheep in the Mojave Desert are part of at least two large metapopulations. These metapopulations are sufficiently large enough to provide for long-term species preservation and evolution because of the maintenance of genetic variation (a level seven or eight reserve, according to Schonewald-Cox 1983). Thus, there is no reason that rams should be moved merely to provide greater genetic variation in other Mojave Desert populations of bighorn sheep.

Land management agencies, such as the BLM and USFS, must complete a series of environmental documents prior to the translocation of bighorn sheep to lands under their jurisdiction. This is a time-consuming process, and the Department is diligently pursuing translocation projects to a number of areas. Removal of a limited number of mature rams from the proposed hunt zones by hunting will not affect future opportunities to translocate bighorn sheep to suitable sites within historical ranges as the environmental documents and other necessary steps are completed.

In 1990, it was estimated to costs an average of $2,257 to translocate a bighorn sheep from one mountain range to another (Bleich 1990b). Given the great expense involved in such an operation and the absence of any biological justification, there is no practical reason for translocating only rams from the Marble Mountains, Kelso Peak/Old Dad Mountains, Clark/Kingston Mountains, Orocopia Mountains, and San Gorgonio Wilderness to other areas.

Since the Department currently has an active and ongoing bighorn sheep translocation program, relocating additional rams would not improve the program. This alternative would not address the Legislature's policy to provide diversified uses of wildlife, including hunting. Additionally, this alternative would not achieve the project objective of providing public hunting opportunities.

ALTERNATIVE 3 - LOWER HUNTING HARVEST OF MATURE RAMS

Under the lower level of hunting alternative, the census data obtained for each mountain range would be used only to verify that the action of bighorn sheep hunting in the Marble/Clipper Mountains, Kelso Peak/Old Dad Mountains, Clark/Kingston Mountains, Orocopia Mountains, San Gorgonio Wilderness, Sheep Hole Mountains, and White Mountains would be consistent with the not more than 15 percent of mature rams described in Section 4902, Fish and Game Code (Appendix 1). A total of one tag would be issued for the Marble/Clipper Mountains, one tag would be issued for Kelso Peak/Old Dad Mountains, one tag would be issued for the Clark/Kingston Mountains, one tag would be issued for the Orocopia Mountains, zero tags would be issued for the San Gorgonio Wilderness, one tag would be issued for the Sheep Hole Mountains, one tag to be issued in the White Mountains, and one auction tag would be available for use in any area.

Under this alternative, fewer tags would be issued than would be issued under the proposed project. It would result in the take of fewer rams in the proposed hunt zones. A high demand for recreational hunting opportunities involving bighorn sheep hunting exists, and this alternative would result in less hunter opportunity than the proposed project. The implementation of this alternative would result in no significant change in existing population levels for the herds. Ram ratios in all herds would remain well above the established herd objectives, and the size of the ewe population would not be affected. Because there would not be a significant change in bighorn sheep numbers on a local,

regional, or statewide basis, there would be no significant effect on nonhunting recreational opportunities. This alternative would not adequately address the high demand for more recreational opportunities involving bighorn sheep.

However, should the Commission select this alternative, the general season would begin in all hunt areas on the first Saturday in December and extend through the first Sunday in February. A hunting season for the purchaser of the auction tag would begin on the first Saturday in November and extend through the first Sunday in February. That individual would have the option of hunting in any of the proposed hunt zones. The total number of tags would be below the 15 percent limitation set by the Legislature.

Nonhunting opportunities (photographing, viewing, and nature study) would not differ significantly from the proposed project. Although the expected effects would be similar to the proposed action, no significant effects on habitat or other species would be expected, based on the potential removal of so few mature rams.

CHAPTER 6. CONSULTATION

Prior to preparing this draft environmental document, in mid December, the Department prepared a notice of preparation (NOP). This notice was provided to individuals and/or organizations which expressed an interest in bighorn sheep management in the past. The NOP was also provided to the State Clearinghouse for distribution, as well as to land management agencies in California that have an interest or play a key role in bighorn sheep management. The Department has consulted with numerous State and Federal agencies regarding bighorn sheep issues.

In an effort to provide the Commission with a reasonable range of alternatives, including the no-project option, and to inform it of the wide range of public concern and recommendations relating to bighorn sheep hunting, this draft environmental document was prepared to include this additional information and analyses of the alternatives.

CHAPTER 7. RESPONSE TO COMMENTS REGARDING THE PROPOSED PROJECT

In accordance with CEQA, Public input and agency consultation were encouraged during the environmental review process. An NOP was provided to the State Clearinghouse, land management agencies having a key role in wild pig management, and all individuals and organizations which expressed an interest in wild pig management. The draft environmental document examined a variety of alternatives. The proposed project was recommended by the Department because it provided the public with the widest range of recreational opportunities related to wild pig populations, either state wide or locally. Every effort was made to avoid a biased analyses of issues. In general, the Department attempted to make the draft environmental document understandable to the public and to objectively summarize a large amount technical information. The Department reviewed and summarized a great deal for scientific literature, which is cited in the document.

No comments regarding the draft environmental document were received.

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APPENDIX 1

Sections 200-207, 1801, 3950, 4700, 4900-4904, and 12008.5,
Fish and Game Code

Article 1. Regulations

(Repealed by its own terms, eff. 1/1/2003.)

§200. Powers of commission.

(Effective only until 1/1/2003.)

There is hereby delegated to the commission the power to regulate the taking or possession of birds, mammals, fish, amphibia, and reptiles to the extent and in the manner prescribed in this article.

No power is delegated to the commission by this article to regulate the taking, possessing, processing, or use of fish, amphibia, kelp, or other aquatic plants for commercial purposes, and no provision of this code relating or applying thereto, nor any regulation of the commission made pursuant to such provision, shall be affected by this article or any regulation made under this article.

(Repealed by the terms of Section 221, eff. 1/1/2003.)

§201. Natural resource; commercial activity; regulation.

(Effective only until 1/1/2003.)

Nothing in this article confers upon the commission any power to regulate any natural resources or commercial or other activity connected therewith, except as specifically provided.

(Repealed by the terms of Section 221, eff. 1/1/2003.)

§202. Exercise of powers.

(Effective only until 1/1/2003.)

The commission shall exercise its powers under this article by regulations made and promulgated pursuant to this article. Regulations adopted pursuant to this article shall not be subject to the time periods for the adoption, amendment, or repeal of regulations prescribed in Sections 11343.4, 11346.4, and 11346.8 of the Government Code.

(Repealed by the terms of Section 221, eff. 1/1/2003.)

§203. Regulations pertaining to birds and mammals.

(Effective only until 1/1/2003.)

Any regulation of the commission pursuant to this article relating to resident game birds, game mammals and fur-bearing mammals may apply to all or any areas, districts, or portions thereof, at the discretion of the commission, and may do any or all of the following as to any or all species or subspecies:

(a) Establish, extend, shorten, or abolish open seasons and closed seasons.
(b) Establish, change, or abolish bag limits and possession limits.
(c) Establish and change areas or territorial limits for their taking.
(d) Prescribe the manner and the means of taking.
(e) Establish, change or abolish restrictions based upon sex, maturity, or other physical distinctions.

(Repealed by the terms of Section 221, eff. 1/1/2003.)

§203.1. Criteria for adopting regulations.

(Effective only until 1/1/2003.)

When adopting regulations pursuant to Section 203, the commission shall consider populations, habitat, food supplies, the welfare of individual animals, and other pertinent facts and testimony.

(Repealed by the terms of Section 221, eff. 1/1/2003.)

§204. Power limitations.

(Effective only until 1/1/2003.)

The commission has no power under this article to make any regulation authorizing or permitting the taking of:

(a) Any bird or mammal in any refuge heretofore or hereafter established by statute, the taking or possession of which shall be regulated pursuant to Sections 10500 to 10506, inclusive.
(b) Elk, the taking or possession of which shall be regulated pursuant to Section 332.
(c) Antelope, the taking or possession of which shall be regulated pursuant to Section 331.

(d) Any spike buck or spotted fawn. "Spotted fawn" means a young deer born that year which has spotted pelage. "Spike buck" means a male deer with unbranched antlers on both sides which are more than three inches in length.

Any regulation establishing a season to compensate for closure of an area due to extreme fire hazard shall be made pursuant to Section 306.

Any regulation setting a special hunting season for mammals, except deer, or game birds which have increased in number to such an extent that a surplus exists or which are damaging property or are overgrazing their range shall be made pursuant to Section 325.

(Repealed by the terms of Section 221, eff. 1/1/2003.)

§205. Regulations pertaining to fish and reptiles.

(Effective only until 1/1/2003.)

Any regulation of the commission pursuant to this article which relates to fish, amphibia, and reptiles, may apply to all or any areas, districts, or portions thereof, at the discretion of the commission, and may do any or all of the following as to any or all species or subspecies:

(a) Establish, extend, shorten, or abolish open seasons and closed seasons.
(b) Establish, change, or abolish bag limits, possession limits, and size limits.
(c) Establish and change areas or territorial limits for their taking.
(d) Prescribe the manner and the means of taking.

(Repealed by the terms of Section 221, eff. 1/1/2003.)

§206. Special meetings; fish, amphibia, reptiles.

(Effective only until 1/1/2003.)

(a) In addition to, or in conjunction with, other regular or special meetings the commission shall, in odd-numbered years, hold meetings in the first 10 days of August, October, November, and December for the purpose of considering and adopting revisions to regulations relating to fish, amphibia, and reptiles. The commission shall alternate the locations of the August and December meetings between Los Angeles or Long Beach and Sacramento, and the October and November meetings between San Diego and Redding or Red Bluff.

(b) At the August meeting, the commission shall receive recommendations for regulations from its own members and staff, the department, other public agencies, and the public.

(c) At the October and November meetings, the commission shall devote time for open public discussion of proposed regulations presented at the August meeting. The department shall participate in this discussion by reviewing and presenting its findings regarding each regulation proposed by the public and by responding to objections raised pertaining to its proposed regulations. After considering the public discussion, the commission shall announce, prior to adjournment of the November meeting, the regulations it intends to add, amend, or repeal relating to fish, amphibia, and reptiles.

(d) At the December meeting, the commission may choose to hear additional public discussion regarding the regulations it intends to adopt. At, or within 20 days after, the meeting, the commission shall add, amend, or repeal regulations relating to any recommendation received at the August meeting regarding fish, amphibia, and reptiles it deems necessary to preserve, properly utilize, and maintain each species or subspecies.

(e) Within 45 days after adoption, the department shall publish and distribute regulations adopted pursuant to this section.

(Amended by Stats 1998 ch 247 §1, eff. 1/1/99. Repealed by the terms of Section 221, eff. 1/1/2003.)

§207. Special meetings; mammals.

(Effective only until 1/1/2003.)

(a) In addition to, or in conjunction with, other regular or special meetings, the commission shall hold meetings in the first 10 days of the months of February, March, and April in even-numbered years for the purpose of considering and adopting revisions to regulations relating to mammals. The commission shall alternate the location of the February meeting between Sacramento and Los Angeles or Long Beach. The commission shall alternate the location of the March meeting between San Diego and Redding or Red Bluff. The commission shall alternate the location of the April meeting between Sacramento and Los Angeles or Long Beach.

(b) At the February meeting, the commission shall receive recommendations for regulations from its own members and staff, the department, other public agencies, and the public.

§1796. Reports on bank sites and program.
No bank site shall be qualified under Section 1785 on or after January 1, 2010. Notwithstanding Section 7550.5 of the Government Code, the department shall report to the Legislature on or before February 1, 1996, and once annually thereafter, with a description and evaluation of each mitigation bank site approved pursuant to this chapter, including, but not limited to, the number of wetland acres and habitat values created, the number of credits issued, an assessment of the biological productivity of the created wetlands, a comparison of the wetlands acreage and values that were created in the mitigation bank and those that were lost by the various projects for which credits were obtained, and any recommendations for improving the program.

CHAPTER 8. CONSERVATION OF WILDLIFE RESOURCES

Article 1. Definitions

§1800. "Wildlife" defined.
As used in this chapter "wildlife" means birds, mammals, and reptiles not raised in captivity.

Article 2. Policy

§1801. Declaration.
It is hereby declared to be the policy of the state to encourage the preservation, conservation, and maintenance of wildlife resources under the jurisdiction and influence of the state. This policy shall include the following objectives:

(a) To maintain sufficient populations of all species of wildlife and the habitat necessary to achieve the objectives stated in subdivisions (b), (c), and (d).

(b) To provide for the beneficial use and enjoyment of wildlife by all citizens of the state.

(c) To perpetuate all species of wildlife for their intrinsic and ecological values, as well as for their direct benefits to all persons.

(d) To provide for aesthetic, educational, and nonappropriative uses of the various wildlife species.

(e) To maintain diversified recreational uses of wildlife, including the sport of hunting, as proper uses of certain designated species of wildlife, subject to regulations consistent with the maintenance of healthy, viable wildlife resources, the public safety, and a quality outdoor experience.

(f) To provide for economic contributions to the citizens of the state, through the recognition that wildlife is a renewable resource of the land by which economic return can accrue to the citizens of the state, individually and collectively, through regulated management. Such management shall be consistent with the maintenance of healthy and thriving wildlife resources and the public ownership status of the wildlife resources.

(g) To alleviate economic losses or public health or safety problems caused by wildlife to the people of the state either individually or collectively. Such resolution shall be in a manner designed to bring the problem within tolerable limits consistent with economic and public health considerations and the objectives stated in subdivisions (a), (b) and (c).

(h) It is not intended that this policy shall provide any power to regulate natural resources or commercial or other activities connected therewith, except as specifically provided by the Legislature.

§1802. Departmental jurisdiction.
The department has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species. The department, as trustee for fish and wildlife resources, shall consult with lead and responsible agencies and shall provide, as available, the requisite biological expertise to review and comment upon environmental documents and impacts arising from project activities, as those terms are used in the California Environmental Protection Act (Division 13 (commencing with Section 21000) of the Public Resources Code).

CHAPTER 9. WETLANDS MITIGATION BANKING
(Added by Stats 2000 ch 950 §1, eff. 1/1/2001.)

Article 1. General Provisions

§1850. Data base of wetlands mitigation banks.
On or before January 1, 2002, the department shall establish an updated data base of all existing and operating wetlands mitigation banks that sell credits to the public in California. To the extent feasible, the department shall use all existing information in compiling this data base and shall utilize the CERES Environmental Data Catalog to make this information available to the public. The department shall update this data base on an annual basis and shall include all relevant information required by Section 1851.
(Added by Stats 2000 ch 950 §1, eff. 1/1/2001.)

§1851. Wetlands mitigation bank site status reports.
On or before January 1, 2002, and biennially thereafter, the department shall review the data base and the data catalog described in Section 1850, and shall provide a report to the Legislature with a description and the status of each existing wetlands mitigation bank site in operation as of January 1, 2001, and each mitigation bank site approved thereafter. The report shall include, but not be limited to, all of the following information:

(a) The name, address, and telephone number of the person or agency who created the wetlands mitigation bank site.

(b) The name, address, and telephone number of the wetlands mitigation bank operator and the address or other appropriate physical description of the location of the wetlands mitigation bank site.

(c) The date the wetlands mitigation bank site was created.

(d) A description of the wetlands mitigation bank site's service area.

(e) A description of existing habitat functions at the wetlands mitigation bank site prior to its development as a wetlands mitigation bank site.

(f) The type of financial assurances secured by the wetlands mitigation bank operator to ensure management of the wetlands mitigation bank site in perpetuity.

(g) Whether goals were established for the wetlands mitigation bank site and what percentage of those goals have been achieved.

(h) Utilizing existing information compiled by the United States Army Corps of Engineers or other federal agencies, the number of wetlands acres and habitat functions created at the bank site.

(i) The number of credits issued and to whom.

(j) An assessment of the biological productivity of the created wetlands.

(k) Utilizing existing information that is publicly available within the records of state or federal agencies, a comparison of the wetlands acreage and habitat functions that were created at the bank site and those that were lost as a result of the permitted projects for which credits were obtained.
(Added by Stats 2000 ch 950 §1, eff. 1/1/2001.)

§1852. Implementation.
This article shall not be implemented until sufficient funds for its implementation have been appropriated in the annual Budget Act or other legislation.
(Added by Stats 2000 ch 950 §1, eff. 1/1/2001.)

CHAPTER 10. NATIVE PLANT PROTECTION

§1900. Intent and purpose.
The intent of the Legislature and the purpose of this chapter is to preserve, protect and enhance endangered or rare native plants of this state.

The Legislature finds that many species and subspecies of native plants are endangered because their habitats are threatened with destruction, drastic modification, or severe

CHAPTER 4. CALIFORNIA CONDOR

§3850. Objectives of preservation project.

The department may carry out a California condor preservation project which has the following objectives:

(a) Habitat protection, consistent with the department's existing legal authority.
(b) Field research, including mortality studies.
(c) Captive breeding program.
(d) Condor release program.

§3851. Development of plan.

The department, jointly with the federal-state condor recovery team established pursuant to the federal Endangered Species Act shall develop a plan to respond to the objectives in Section 3850. Based on the plan, the department shall develop specific activities, studies, and programs to be administered by the department in the areas of habitat protection and field research. The department may contract for all or some of these activities, studies, and programs.

§3852. Breeding program funds.

The department shall provide funds to the Zoological Society of San Diego and to the Los Angeles Zoo for a condor breeding program on the grounds of each zoo.

§3853. Condor release program.

In addition to the programs in Section 3852, a condor release program administered by the department and the United States Fish and Wildlife Service may be contracted to the Zoological Society of San Diego and the Los Angeles Zoo.

§3854. Funding limitation.

Not more than 10 percent of the funds provided to the zoos under this chapter may be used for administrative costs of the program.

§3855. Monitoring of program; biannual reports.

Both the breeding program and the release program, if authorized by the department, shall meet criteria established by the department and shall be monitored by the department. The zoos shall submit biannual reports to the department, which describe progress made in the breeding program and the release program.

§3856. Status report to Legislature.

The department shall include copies of the biannual reports from the zoos in the annual report to the Legislature on the status of listed species required in Section 2079.

§3857. Funds from other sources.

To the extent possible, the department shall seek private sector funding and any federal funds which may be available to augment state funds for the purposes of this chapter.

PART 3. MAMMALS

Chapter
1. Game Mammals.
2. Fur-Bearing Mammals.
3. Nongame Mammals and Depredators.
4. Deer.
5. Marine Mammals.
6. Burros.
7. Wild Pigs.
8. Fully Protected Mammals.
9. Bear.
10. Mountain Lions.
11. Bighorn Sheep.

CHAPTER 1. GAME MAMMALS

§3950. Game mammals.

(a) Game mammals are: deer (genus *Odocoileus*), elk (genus *Cervus*), prong-horned antelope (genus *Antilocapra*), wild pigs, including feral pigs and European wild boars (genus *Sus*), black and brown or cinnamon bears (genus *Euarctos*), mountain lions (genus *Felis*), jackrabbits and varying hares (genus *Lepus*), cottontails, brush rabbits, pigmy rabbits (genus *Sylvilagus*), and tree squirrels (genus *Sciurus* and *Tamiasciurus*).

(b) Nelson bighorn sheep (subspecies *Ovis canadensis nelsoni*) are game mammals only for the purposes of sport hunting described in subdivision (b) of Section 4902.

§3950.1. Mountain lion not a game mammal.

(a) Notwithstanding Section 3950 or any other provision of this code, the mountain lion (genus *Felis*) shall not be listed as, or considered to be, a game mammal by the department or the commission.

(b) Section 219 does not apply to this section. Neither the commission nor the department shall adopt any regulation that conflicts with or supersedes this section.

§3951. Tule elk.

The commission may authorize the taking of tule elk pursuant to Section 332. The department shall relocate tule elk in areas suitable to them in the State of California and shall cooperate to the maximum extent possible with federal and local agencies and private property owners in relocating tule elk in suitable areas under their jurisdiction or ownership. When economic or environmental damage occurs, emphasis should be placed on managing each tule elk herd at a biologically sound level through the use of relocation, sport hunting, or other appropriate means as determined by the department after consulting with local landowners.

The number of tule elk in the Owens valley shall not be permitted to increase beyond 490, or any greater number hereafter determined by the department to be the Owens Valley's holding capacity in accordance with game management principles. Within 180 days of the enactment of the bill which amended this section at the 1987 portion of the 1987–88 Regular Session of the Legislature, the department shall complete management plans for high priority areas including, but not limited to, Potter Valley and Mendocino County. The plans shall include, but not be limited to:

(1) Definition of the boundaries of the management area.
(2) Characteristics of the tule elk herds within the management area.
(3) The habitat conditions and trends within the management area.
(4) Major factors affecting the tule elk population within the management area, including, but not limited to, conflicts with other land uses.
(5) Management activities necessary to achieve the goals of the plan.

The Director of Fish and Game shall submit a report describing the status of tule elk, as herein set forth, to the commission and to the Governor for transmittal to the Legislature no later than the fifth legislative day of the 1974 Regular Session of the Legislature and every two years thereafter. The report shall also include, but not be limited to:

(1) The population status of tule elk in California.
(2) Age and sex information.
(3) Condition of their ranges.
(4) Other pertinent information.

§3960. Injurious dogs.

It is unlawful to permit or allow any dog to pursue any big game mammal during the closed season on such mammal, to pursue any fully protected, rare, or endangered mammal at any time, or to pursue any mammal in a game refuge or ecological reserve if hunting within such refuge or ecological reserve is unlawful.

Employees of the department may capture any dog not under the reasonable control of its owner or handler, when such uncontrolled dog is pursuing, in violation of this section, any big game, fully protected, rare, or endangered mammal.

Employees of the department may capture or dispatch any dog inflicting injury or immediately threatening to inflict injury to any big game mammal during the closed season on such mammal, and they may capture or dispatch any dog inflicting injury or immediately threatening to inflict injury on any fully protected, rare, or endangered mammal at any time.

Neither the commission nor any other department or agency has any power to modify the provisions of this section by any order, rule, or regulation.
(Amended by Stats 1998 ch 485 §75, eff. 1/1/99.)

§4606. *(Repealed by Stats 1998 ch 485 §76, eff. 1/1/99.)*

CHAPTER 7. WILD PIGS

§4650. Wild pigs defined.

Wild pigs, as used in this chapter, means free-roaming pigs not distinguished by branding, ear marking, or other permanent identification methods.

§4651. Management plan for wild pigs.

(a) The department shall prepare a plan for the management of wild pigs. Under the plan, the status and trend of wild pig populations shall be determined and management units shall be designated within the state. The plan may establish pig management zones to address regional needs and opportunities. In preparing the plan, the department shall consider available, existing information and literature relative to wild pigs.

(b) The plan may include all of the following:

(1) The distribution and abundance of wild pigs, as described in Section 3950.

(2) A survey of range conditions.

(3) Recommendations for investigations and utilization of wild pigs.

(4) Encouraging mitigation of depredation by sport hunting pursuant to this chapter.

(5) Live trapping and relocation of wild pigs to areas suitable and accessible to mitigation of depredation, with the consent of the landowner and after prior consultation with adjacent landowners who, in the department's opinion may be impacted, pursuant to this chapter.
(Amended by Stats 1997 ch 481 §4, eff. 1/1/98.)

§4652. Wild pig licenses.

(a) It is unlawful to take any wild pig, except as provided in Section 4181, without first procuring a license tag authorizing the taking of such wild pig in accordance with this chapter.

(b) This section shall become operative on July 1, 1992.

§4653. License information.

The department may determine the design and type of information to be included on the wild pig license tag and prescribe the procedures for the issuance and use of the tag.

§4654. Hunting license required to procure wild pig tags.

(a) Any resident of this state, 12 years of age or older, who possesses a valid hunting license, may procure the number of wild pig tags corresponding to the number of wild pigs that may legally be taken by one person during the license year upon payment of a base fee of one dollar and fifty cents ($1.50), as adjusted under Section 713 for each wild pig tag. Wild pig tags may be sold only in packets of not more than five wild pig tags.

(b) Any nonresident, 12 years of age or older, who possesses a valid California nonresident hunting license, may procure the number of wild pig tags corresponding to the number of wild pigs that may legally be taken by one person during the license year upon payment of a base fee of ten dollars ($10), as adjusted under Section 713, for each wild pig tag. Wild pig tags may be sold only in packets of not more than five wild pig tags.

(c) This section shall become operative on July 1, 1992.

§4655. License tags valid during season.

(a) Wild pig license tags are valid only during that portion of the current hunting license year in which wild pigs may be taken or possessed in any area of the state.

(b) This section shall become operative on July 1, 1992.

§4656. Fund management.

Revenues received pursuant to this chapter shall be deposited in the Fish and Game Preservation Fund. These funds shall be available for expenditure by the department solely for wild pig management. The department shall maintain all internal accounting measures necessary to ensure that all restrictions on these funds are met.

§4657. Tagging of a wild pig.

(a) The holder of a wild pig license tag shall keep the tag in his or her possession while hunting wild pig. Prior to the taking of any wild pig, the holder of a wild pig tag shall write or otherwise affix his or her hunting license number to the wild pig license tag. Upon the killing of any wild pig, the date of the kill shall be clearly marked by the holder of the tag on both parts of the tag. Prior to transporting the pig, a tag shall be attached to the carcass by the holder of the tag. The report card portion of the tag shall be transmitted to the department by the holder of the tag. Possession of an untagged wild pig is a violation of this section.

(b) This section shall become operative on July 1, 1992.

CHAPTER 8. FULLY PROTECTED MAMMALS

§4700. Prohibitions against possession, etc. of fully protected mammals.

Fully protected mammals or parts thereof may not be taken or possessed at any time and no provision of this code or any other law shall be construed to authorize the issuance of permits or licenses to take any fully protected mammal and no permits or licenses heretofore issued shall have any force or effect for that purpose. However, the commission may authorize the collecting of those species for necessary scientific research. Legally imported fully protected mammals or parts thereof may be possessed under a permit issued by the department.

The following are fully protected mammals:

(a) Morro Bay kangaroo rat (*Dipodomys heermanni morroensis*).

(b) Bighorn sheep (*Ovis canadensis*) except Nelson bighorn sheep (subspecies *Ovis canadensis nelsoni*) as provided by subdivision (b) of Section 4902.

(c) Northern elephant seal (*Mirounga angustirostris*).

(d) Guadalupe fur seal (*Arctocephalus townsendi*).

(e) Ring-tailed cat (Genus *Bassariscus*).

(f) Pacific right whale (*Eubalaena sieboldi*).

(g) Salt-marsh harvest mouse (*Reithrodontomys raviventris*).

(h) Southern sea otter (*Enhydra lutris nereis*).

(i) Wolverine (*Gulo luscus*).

CHAPTER 9. BEAR

§4750. License tag requirement; steel-jawed traps.

It is unlawful to take any bear with firearm, trap, or bow and arrow without first procuring a license tag authorizing the taking of such bear in accordance with the provisions of this chapter, but no iron or steel-jawed or any type of metal-jawed trap shall be used to take any bear.

§4751. Procurement of tags and fees.

(a) Any resident of this state, 12 years of age or over, who possesses a valid hunting license, may procure the number of bear tags corresponding to the number of bear that may legally be taken by one person during the current license year, upon payment of a base fee of fifteen dollars ($15), as adjusted under Section 713, for each bear tag.

(b) Any nonresident of this state, 12 years of age or over, who possesses a valid California hunting license, may procure the number of bear license tags corresponding to the number of bear that may be legally taken by one person during the current license year upon payment of the base fee of one hundred five dollars ($105), as adjusted under Section 713, for each bear tag.

§4752. Validity of tags.

Bear license tags are valid only during that portion of the current hunting license year in which bear may be taken or possessed in any district.

§4753. Filling out of tag when killing bear.

The holder of a bear license tag shall carry the tag while hunting bear, and upon the killing of any bear shall immediately fill out both parts of the tag and punch out clearly the date of the kill. One part of the tag shall be immediately attached to the ear of the bear and kept attached during the open season and for 15 days thereafter. The other part of the tag shall be

department or, if telephoning is not practicable, in writing within five days after the capturing, injuring, or killing of the mountain lion. At the time of making the report of the capturing, injuring, or killing, the holder of the permit shall make arrangements to turn over the mountain lion or the entire carcass of the mountain lion which has been recovered to a representative of the department and shall do so in a timely manner.

§4807. Conditions for immediate taking of mountain lion.

(a) Any mountain lion that is encountered while in the act of pursuing, inflicting injury to, or killing livestock, or domestic animals, may be taken immediately by the owner of the property or the owner's employee or agent. The taking shall be reported within 72 hours to the department. The department shall investigate the depredation, and, if the mountain lion was captured, injured, or killed, the mountain lion or the entire carcass of the mountain lion which has been recovered shall be turned over to the department. Upon satisfactorily completing the investigation and receiving the mountain lion or the carcass, if recovered, the department shall issue a permit confirming that the requirements of this section have been met with respect to the particular mountain lion taken under these circumstances.

(b) The department shall undertake a complete necropsy on any returned mountain lion carcass and report the findings to the commission. The commission shall compile the reported findings and prepare an annual written report that shall be submitted to the Legislature not later than the January 15 next following the year in which the mountain lion was taken.

§4808. "Agent" defined.

As used in this chapter, "agent" means the agent or employee of the owner of the damaged or destroyed property, any county or city predator control officer, any employee of the Animal Damage Control Section of the United States Department of Agriculture, any departmental personnel, or any authorized or permitted houndsman registered with the department as possessing the requisite experience and having no prior conviction of any provision of this code or regulation adopted pursuant to this code. A plea of nolo contendere is a conviction for purposes of this section.

§4809. Means of taking mountain lion.

Mountain lions authorized to be taken pursuant to this chapter shall be taken by the most effective means available to take the mountain lion causing the damage or destruction, except that no mountain lion shall be taken by means of poison, leg-hold or metal-jawed traps, and snares.

CHAPTER 11. BIGHORN SHEEP

§4900. Management and maintenance of bighorn sheep.

The Legislature declares that bighorn sheep are an important wildlife resource of the state to be managed and maintained at sound biological levels. Therefore, it is hereby declared to be the policy of the state to encourage the preservation, restoration, utilization and management of California's bighorn sheep population. The management shall be in accordance with the policy set forth in Section 1801.

§4901. Status and trends of populations.

The department shall determine the status and the trend of bighorn sheep populations by management units. A plan shall be developed for each of the management units. The plan for each management unit shall include all of the following:

(a) Data on the numbers, age, sex ratios, and distribution of bighorn sheep within the management unit.

(b) A survey of range conditions and a report on the competition that may exist as a result of human, livestock, wild burro, or any other mammal encroachment.

(c) An assessment of the need to relocate or reestablish bighorn populations.

(d) A statement on the prevalence of disease or parasites within the population.

(e) Recommendations for achieving the policy objective of Section 4900.

§4902. Nelson bighorn rams.

(a) The commission may adopt all regulations necessary to provide for biologically sound management of Nelson bighorn sheep (subspecies *Ovis canadensis nelsoni*).

(b) After the plans developed by the department pursuant to Section 4901 for the management units have been submitted, the commission may authorize sport hunting of mature Nelson bighorn rams. Prior to authorizing the sport hunting, the commission shall take into account the Nelson bighorn sheep population statewide, including the population in the management units designated for hunting.

Notwithstanding Section 219, the commission shall not, however, adopt regulations authorizing the sport hunting in a single year of more than 15 percent of the mature Nelson bighorn rams in a single management unit, based on the department's annual estimate of the population in each management unit.

(c) The fee for a license tag to take a Nelson bighorn ram may be determined by the commission, but shall not exceed five hundred dollars ($500).

(d) The commission shall annually direct the department to authorize not more than three of the license tags available for issuance that year to take Nelson bighorn rams for the purpose of raising funds for programs and projects to benefit bighorn sheep. These license tags may be sold to residents or nonresidents of the State of California at auction or by other method and shall not be subject to the fee limitation prescribed in subdivision (c). Commencing with tags sold for the 1993 hunting season, if more than one tag is authorized, the department shall designate a nonprofit organization organized pursuant to the laws of this state, or the California chapter of a nonprofit organization organized pursuant to the laws of this state, or the California chapter of a nonprofit organization organized pursuant to the laws of another state, as the seller* not less than one of these tags. The number of tags authorized for the purpose of raising funds pursuant to this subdivision, if more than one, shall not exceed 15 percent of the total number of tags authorized pursuant to subdivision (b).

**Probably should be "seller of".*

(e) No license tag issued pursuant to this section shall be valid unless and until the licensee has successfully completed a prehunt hunter familiarization and orientation and has demonstrated to the department that he or she is familiar with the requisite equipment for participating in the hunting of bighorn rams, as determined by the commission. The orientation shall be conducted by the department at convenient locations and times preceding each season, as determined by the commission.

§4903. Bighorn sheep account.

Revenue from the fees authorized by this chapter shall be deposited in the Fish and Game Preservation Fund and shall be expended solely for purposes of the bighorn sheep program. Notwithstanding Sections 711 and 13004, this revenue, upon appropriation by the Legislature, shall be available for expenditure by the department solely for programs and projects to benefit bighorn sheep and for the direct costs and administrative overhead incurred solely in carrying out the department's bighorn sheep activities. Administrative overhead shall be limited to the reasonable costs associated with the direct administration of the program. These funds shall be used to augment, and not to replace, moneys appropriated from existing funds available to the department for the preservation, restoration, utilization, and management of bighorn sheep. The department shall maintain internal accountability necessary to ensure that all restrictions on the expenditure of these funds are met.

§4904. Annual report.

(a) The department shall annually report the following to the Legislature:

(1) The management units for which plans have been developed pursuant to Section 4901.

(2) A summary of the data from the annual count conducted by the department for the purposes of subdivision (b) of Section 4902.

(3) The number of license tags issued in the preceding season, and the number of mature Nelson bighorn rams taken under valid license tags in the preceding season.

(4) Any instance known to the department of the unlawful or unlicensed taking of a bighorn sheep in this state and the disposition of any prosecution therefor.

(5) The number of bighorn sheep relocated during the previous year, the area where reintroduced, a statement on the success of the reintroduction, and a brief description of any reintroduction planned for the following year.

(b) The report which is due in 1991 shall be presented to the Legislature on or before July 1, 1991, and shall consist of a compilation of the results of the ongoing study conducted pursuant to this section each year since the enactment of this chapter and an assessment of the environmental impact of the hunting of Nelson bighorn sheep on the herds.

term or condition of probation, a requirement that the person pay at least the minimum fine prescribed in this section.

§12004. Unlawful use of gill nets.

(a) The punishment for a first conviction of a violation of Section 8685.5, 8685.6, 8685.7, or 8688 is a fine of not more than five thousand dollars ($5,000), or imprisonment in the county jail for a period not to exceed six months, or the revocation of any license issued pursuant to Sections 8032 to 8036, inclusive, or any combination of these penalties.

(b) The punishment for a second or subsequent conviction of a violation of Section 8685.5, 8685.6, 8685.7, or 8688, which offense occurred within five years of another offense which resulted in a conviction of Section 8685.5, 8685.6, 8685.7, or 8688 is a fine of not more than ten thousand dollars ($10,000), or imprisonment in the state prison, or imprisonment in the county jail for a period not to exceed one year, or the revocation of any license issued pursuant to Sections 8032 to 8036, inclusive, or any combination of these penalties.

§12005. Penalties for buying or selling bear parts.

(a) Notwithstanding Section 12000, and except as otherwise provided in subdivision (c), the punishment for each violation of Section 4758 shall include both of the following:

(1) A fine of two hundred fifty dollars ($250) for each bear part. As used in this paragraph, "bear part" means an individual part or group of like parts of any bear that the defendant knowingly and unlawfully sells, purchases, or possesses for sale. For the purposes of this paragraph, claws, paws, or teeth from a single bear that are knowingly purchased, sold, or possessed for sale with the intent that they be delivered to a single end user shall be considered a single part.

(2) An additional fine of not more than five thousand dollars ($5,000), imprisonment in the state prison or the county jail for not more than one year, or both the fine and imprisonment.

(b) If the conviction is for the possession of two bear gall bladders and probation is granted, or if the execution or imposition of sentence is suspended, it shall be a condition thereof that a minimum term of 30 days shall be served in the county jail.

(c)(1) The possession of three or more bear gall bladders is punishable by both of the following:

(A) The fine specified in paragraph (1) of subdivision (a).

(B) An additional fine of not more than ten thousand dollars ($10,000), imprisonment in the county jail for not more than one year, or both that fine and imprisonment.

(2) If probation is granted, or the execution or imposition of sentence is suspended, it shall be a condition thereof that a minimum term of three months shall be served in the county jail.

(d) Consecutive sentences shall be imposed for separate violations of this section.

(Amended by Stats 1998 ch 46 §2, eff. 1/1/99.)

§12005.5. Violations of provisions relating to body-gripping traps and poisons.

Notwithstanding Sections 12000 and 12002, a violation of Section 3003.1 or 3003.2, or any rule or regulation adopted pursuant thereto, is punishable by a fine of not less than three hundred dollars ($300) or more than two thousand dollars ($2,000), or by imprisonment in the county jail for not more than one year, or by both that fine and imprisonment. The Legislature may increase, but may not decrease, these penalties.

(Added by 1998 Prop 4 §3, eff. 11/4/98.)

§12006. Violations of provisions relating to sturgeon.

Notwithstanding Section 12002, the punishment for a violation of Section 7370 or 8371 as that section relates to sturgeon is a fine not to exceed five thousand dollars ($5,000); imprisonment in the county jail not to exceed one year; or both the fine and imprisonment.

§12006.6. Violations of provisions relating to abalone; closed areas.

Notwithstanding Section 12000 or 12002.8, and in addition to Section 12009, and notwithstanding the type of fishing license or permit held, if any person is convicted of a violation of Section 5521 or 5521.5, and the offense occurs in an area closed to the taking of abalone for commercial purposes, and the person takes or possesses more than 12 abalone at one time or

more than 100 abalone during a calendar year, that person shall be punished by all of the following:

(a) A fine of not less than fifteen thousand dollars ($15,000) or more than forty thousand dollars ($40,000).

(b) The court shall order the department to permanently revoke, and the department shall permanently revoke, the commercial fishing license and any commercial fishing permits of that person. The person punished under this subdivision shall not, thereafter, be eligible for any license or permit to take or possess fish for sport or commercial purposes, including, but not limited to, a commercial fishing license or a sport fishing or sport ocean fishing license. Notwithstanding any other provision of law, the commercial license or permit of a person arrested for a violation punishable under this section may not be sold, transferred, loaned, leased, or used as security for any financial transaction until disposition of the charges is final.

(c) Any vessel, diving or other fishing gear or apparatus, or vehicle used in the commission of an offense punishable under this section shall be seized, and shall be ordered forfeited in the same manner prescribed for nets or traps used in violation of this code, as described in Article 3 (commencing with Section 8630) of Chapter 3, or in the manner prescribed in Section 12157.

(d) Not less than 50 percent of the revenue deposited in the Fish and Game Preservation Fund from fines and forfeitures collected pursuant to this section shall be allocated for the support of the Special Operations Unit of the Wildlife Protection Division of the department and used for law enforcement purposes.

(Renumbered from Section 8312 and amended by Stats 1996 ch 870 §32.8; amended by Stats 1997 ch 787 §37; Stats 2000 ch 388 §22, eff. 1/1/2001.)

§12007. Maximum punishment for specific violations.

Notwithstanding Section 12002, the punishment for (1) a second or subsequent violation of Section 1601 or 1603 on the same project or streambed alteration agreement; (2) each violation of Section 2270, 2271, 6400, 6400.5, 15202, 15509, or 15600; or (3) each violation of any regulation adopted pursuant to Section 15510, is a fine of not more than five thousand dollars ($5,000) or imprisonment in the county jail for a period not to exceed one year, or both the fine and imprisonment.

§12008. Violation of provisions relating to endangered species.

Except as otherwise provided in Section 597 of the Penal Code, the punishment for a violation of any of the following provisions is a fine of not more than five thousand dollars ($5,000) or imprisonment in the county jail for not more than one year, or both the fine and imprisonment:

(a) Chapter 1.5 (commencing with Section 2050) of Division 3.
(b) Section 3511.
(c) Chapter 8 (commencing with Section 4700) of Part 3 of Division 4.
(d) Chapter 2 (commencing with Section 5050) of Division 5.
(e) Section 5515.

§12008.5. Punishment for taking bighorn sheep.

Notwithstanding Section 12000, the punishment for taking any bighorn sheep in violation of Chapter 11 (commencing with Section 4900) of Part 3 of Division 4, or any regulation adopted pursuant thereto, is a fine of not more than two thousand dollars ($2,000) or imprisonment in the county jail for not more than one year, or both the fine and imprisonment.

§12009. Penalties for abalone violations.

(a) Notwithstanding Section 12000, and except as provided in Section 12006.6, the punishment for a violation of any provision of Section 5521 or 5521.5, or any regulation adopted pursuant thereto, or of Section 7121 involving abalone, is a fine of not less than fifteen thousand dollars ($15,000) or more than forty thousand dollars ($40,000) and imprisonment in the county jail for a period not to exceed one year. The court shall permanently revoke any commercial fishing license, commercial fishing permit, or sport fishing license issued by the department. Any vessel, diving or other fishing gear or apparatus, or vehicle used in the commission of an offense punishable under this section, may be seized and may be ordered forfeited by the court pursuant to subdivision (c) of Section 12157. Notwithstanding any other provision of law, the commercial license of any person arrested for a violation punishable

APPENDIX 2

Sections 353, 354, 362, 550, 708 and 781.5,
Title 14, California Code of Regulations

HISTORY

1. New NOTE filed 9–16–81; designated effective tenth day thereafter (Register 81, No. 38).

§ 311.8. Prohibition Against Shooting Resident Small Game from Boats.

HISTORY

1. Repealer filed 6–4–70; designated effective 7–1–70 (Register 70, No. 23).

§ 312. Sporting Hunting License: Non–Transferable Tags As Permits.

NOTE: Authority cited: Sections 200, 202, 203 and 3035, Fish and Game Code. Reference: Sections 200, 202, 203, 206, 211–214.5, 220, and 3035, Fish and Game Code.

HISTORY

1. New section 604 filed 7–6–51; effective thirtieth day thereafter (Register 25, No. 1).
2. Amendment filed 2–19–52; effective thirtieth day thereafter (Register 27, No. 4).
3. Renumbered from former section 604 (Register 59, No. 9).
4. Amendment filed 2–4–64; designated effective 7–1–64 (Register 64, No. 3).
5. Amendment of NOTE filed 9–16–81; designated effective tenth day thereafter (Register 81, No. 38).
6. Repealer filed 4–18–91; operative 5–18–91 (Register 91, No. 21).

§ 313. Upland Game Stamp.

Any adult License holder taking resident game birds including Chinese spotted doves, ringed turtle doves, of the family Columbidae; California quail and varieties thereof, Gambel's or desert quail, mountain quail and varieties thereof, blue, ruffed, and sage grouse, white–tailed ptarmigan, Hungarian partridges, red–legged partridges including the chukar and other varieties, ring–necked pheasants and varieties, and wild turkeys of the order Galliformes; and migratory game birds including common snipe, western mourning doves, white–winged doves, and band–tailed pigeons must have a current state upland game stamp affixed to their license.

NOTE: Authority cited: Sections 200, 201, 202, and 203, Fish and Game Code. Reference: Sections 3682 Fish and Game Code.

HISTORY

1. New section filed 7–15–93; operative 8–16–93 (Register 93, No. 29).

Chapter 3. Big Game

§ 350. Big Game Defined.

"Big game" means the following: deer (genus *Odocoileus*), elk (genus *Cervus*), pronghorn antelope (genus *Antilocarpa*), wild pig (feral pigs, European wild pigs and their hybrids (genus *Sus*), black bear (genus *Ursus*) and Nelson bighorn sheep (subspecies *Ovis canadensis nelsoni*) in the areas described in subsection 4902(b) of the Fish and Game Code.

NOTE: Authority cited: Sections 200, 202 and 203, Fish and Game Code. Reference: Sections 200, 202, 203, 203.1, 206, 211, 212, 213, 215, 3950, 4700, 4900 and 4902, Fish and Game Code.

HISTORY

1. Amendment filed 6–14–77; designated effective 7–1–77 (Register 77, No. 25). For prior history, see Register 76, No. 23.
2. Amendment filed 6–13–78; effective thirtieth day thereafter (Register 78, No. 24).
3. Amendment filed 5–11–79; designated effective 7–1–79 (Register 79, No. 19).
4. Amendment filed 5–19–80; designated effective 5–19–80 (Register 80, No. 21).
5. Renumbering and amendment of section 350 to section 360, and new section 350 filed 5–13–81; designated effective tenth day thereafter (Register 81, No. 20).
6. Amendment filed 6–17–83; designated effective tenth day thereafter (Register 83, No. 25).
7. Editorial correction filed 6–17–83 (Register 83, No. 25).
8. Amendment filed 7–1–86; effective upon filing (Register 86, No. 27).
9. Amendment filed 6–22–87; operative 6–22–87 (Register 87, No. 27).
10. Amendment of section filed 6–28–91; operative 6–28–91 (Register 91, No. 42).

§ 350.5. Specially Protected Mammal Defined.

NOTE: Authority cited: Sections 200, 202 and 203, Fish and Game Code. Reference: Sections 200–203.1, 206, 207, 211–222 and 4850, Fish and Game Code.

HISTORY

1. New section filed 6–17–83; designated effective tenth day thereafter (Register 83, No. 25).
2. Repealer filed 7–1–86; effective upon filing (Register 86, No. 27).

§ 351. Forked–Horn Buck, Antlerless and Either–Sex Deer Defined.

(a) Forked–Horn Buck Defined. For the purpose of these regulations a forked–horn buck is defined as a male deer having a branched antler on either side with the branch in the upper two–thirds of the antler. Eye guards or other bony projections on the lower one–third of the antler shall not be considered as points or branches.

(b) Antlerless Deer Defined. For the purpose of these regulations, antlerless deer are defined as female deer, fawns of either sex other than spotted fawns, and male deer with an unbranched antler on one or both sides which is not more than three inches in length.

(c) Either–Sex Deer Defined. For the purpose of these regulations, either–sex deer are defined as antlerless deer as described in Section (b), or legal bucks that have two or more points in the upper two–thirds of either antler. Spike bucks may not be taken.

NOTE: Authority cited: Sections 200, 202 and 203, Fish and Game Code. Reference: Sections 200–203.1 and 207, Fish and Game Code.

HISTORY

1. Amendment filed 6–13–68; designated effective 7–1–68 (Register 68, No.
2. New subsections (c) and (d) filed 5–11–79; designated effective 7–1–79 (Register 79, No. 19.)
3. Renumbering and amendment of section 351 to section 365 and renumbe and amendment of section 256 to section 351 filed 5–13–81; designated e tive tenth day thereafter (Register 81, No. 20). For history of former section see Registers 80, No. 21; 79, No. 19 and 78, No. 24.
4. Amendment of section heading and subsection (a), repealer of subsectio and subsection relettering, and amendment of newly designated subsectio and NOTE filed 6–23–93; operative 6–23–93 pursuant to Fish and Game sections 202 and 215 (Register 93, No. 26).

§ 352. Shooting Hours on Big Game.

Hunting and shooting hours for big game, including but not limited to deer, antelope, elk, bear, and wild pig shall be from one–half hour before sunrise to one–half hour after sunset.

NOTE: Authority cited: Sections 3000, Fish and Game Code. Reference: Sections 3000, and 3950, Fish and Game Code.

HISTORY

1. Amendment filed 6–4–70; designated effective 7–1–70 (Register 70, No
2. Amendment filed 5–28–71; designated effective 7–1–71 (Register 71, No
3. Amendment filed 6–5–72; effective thirtieth day thereafter (Register 7 24).
4. Amendment filed 6–13–78; effective thirtieth day thereafter (Register 7 24).
5. Renumbering of Section 356 to Section 352 filed 5–13–81; designated ef tenth day thereafter (Register 81, No. 20). For history of former Section 3 Registers 72, No. 24; 71, No. 22 and 70, No. 23.

§ 353. Methods Authorized for Taking Big Game.

(a) Except for the provisions of subsections 353(b) through (g 14, CCR, big game (as defined by section 350, title 14, CCR) ma be taken by rifles using centerfire cartridges with softnose or exp bullets; bow and arrow (see section 354, title 14, CCR, for archery ment regulations); or wheellock, matchlock, flintlock or percussio muzzleloading rifles using black or pyrodex powder with single bullet loaded from the muzzle and at least .40 caliber in designa

(b) Shotguns capable of holding not more than three shells firing slugs may be used for the taking of deer, bear and wild pigs. I where the discharge of rifles or shotguns with slugs is prohib county ordinance, shotguns capable of holding not more than thre firing size 0 or 00 buckshot may be used for the taking of deer

(c) Pistols and revolvers using centerfire cartridges with soft expanding bullets may be used to take deer, bear, and wild pigs.

(d) Pistols and revolvers with minimum barrel lengths of 4 inc ing centerfire cartridges with softnose or expanding bullets may to take elk and bighorn sheep.

(e) Crossbows may be used to take deer and wild pigs only during the regular seasons.

(f) Muzzleloading rifle hunters may not possess other firearms or archery equipment authorized for taking big game, pursuant to subsections 353 (a) through (d), and shall possess muzzleloading rifles equipped with iron sights only, while hunting under the provisions of a muzzleloading rifle only tag.

(g) Under the provisions of a muzzleloading rifle/archery tag, hunters may possess muzzleloading rifles as described in subsection 353(a) equipped with iron sights only; archery equipment as described in Section 354; or both. For purposes of this subsection, archery equipment does not include crossbows.

NOTE: Authority cited: Sections 200, 202 and 203, Fish and Game Code. Reference: Sections 200, 202, 203, 203.1, 207 and 3950, Fish and Game Code.

HISTORY

1. Repealer and new section filed 6–22–87; operative 6–22–87 (Register 87, No. 27). For prior history, see Register 85, No. 44.
2. Amendment of subsection (e) and new subsection (g) filed 5–31–88; operative 5–31–88 (Register 88, No. 23).
3. Amendment of subsection (a) and new subsection (h) filed 10–15–90 as an emergency; operative 10–15–90 (Register 90, No. 46). A Certificate of Compliance must be transmitted to OAL by 2–12–91 or emergency language will be repealed by operation of law on the following day.
4. Reinstatement of section as it existed prior to emergency amendment filed 10–15–90 by operation of Government Code section 11346.1(f) (Register 91, No. 49).
5. Amendment of subsection (a) filed 7–8–92; operative 7–8–92 pursuant to Fish and Game Code section 215 (Register 92, No. 28).
6. Amendment of subsections (b) and (c) and NOTE filed 6–23–93; operative 6–23–93 pursuant to Fish and Game Code sections 202 and 215 (Register 93, No. 26).
7. Amendment of subsections (a) and (g) filed 7–13–94; operative 7–13–94 pursuant to sections 202 and 215, Fish and Game Code (Register 94, No. 28).
8. Change without regulatory effect amending subsection (g) filed 3–28–96 pursuant to section 100, title 1, California Code of Regulations (Register 96, No. 13).
9. Amendment of subsection (a), new subsection (d), repealer of subsections (e) and (f), subsection relettering, and amendment of newly designated subsection (f) filed 7–1–98; operative 7–1–98 pursuant to Fish and Game Code sections 202 and 215 (Register 98, No. 27).
10. Amendment of subsection (a) and new subsection (g) filed 6–27–2000; operative 6–27–2000 pursuant to Fish and Game Code sections 202 and 205 (Register 2000, No. 26).

§ 354. Archery Equipment and Crossbow Regulations.

(a) Bow, as used in these regulations, means any device consisting of a flexible material having a string connecting its two ends and used to propel an arrow held in a firing position by hand only. Bow, includes long bow, recurve or compound bow.

(b) Crossbow, as used in these regulations means any device consisting of a bow or cured latex band or other flexible material (commonly referred to as a linear bow) affixed to a stock, or any bow that utilizes any device attached directly or indirectly to the bow for the purpose of keeping a crossbow bolt, an arrow or the string in a firing position. A crossbow is not archery equipment.

(c) For the taking of big game, hunting arrows and crossbow bolts with a broad head type blade which will not pass through a hole seven–eighths inch in diameter shall be used. For the taking of migratory game birds, resident small game, furbearers and nongame mammals and birds any arrow or crossbow bolt may be used except as prohibited by subsection (d) below.

(d) No arrows or crossbow bolt with an explosive head or with any substance which would tranquilize or poison any animal may be used. No arrows or crossbow bolt without flu–flu fletching may be used for the take of pheasants and migratory game birds, except for provisions of section 507(a)(2).

(e) No arrow or crossbow bolt may be released from a bow or crossbow upon or across any highway, road or other way open to vehicular traffic.

(f) No bow or crossbow may be used which will not cast a legal hunting arrow, except flu–flu arrows, a horizontal distance of 130 yards.

(g) Crossbows may not be used to take game birds and game mammals during archery seasons.

(h) Archers may not possess a firearm while hunting in the field during any archery season, or while hunting during a general season under the provisions of an archery only tag.

(i) No person may nock or fit the notch in the end of an arrow to a bowstring or crossbow string in a ready–to–fire position while in or on any vehicle.

NOTE: Authority cited: Sections 200, 202, 203 and 240, Fish and Game Code. Reference: Sections 200, 202, 203 and 203.1, Fish and Game Code.

HISTORY

1. Amendment of subsections (a) and (f) filed 6–24–85 as an emergency; effective upon filing (Register 85, No. 27). A Certificate of Compliance must be transmitted to OAL within 120 days or emergency language will be repealed on 10–22–85.
2. Notice of Erroneous Filing declaring 6–24–85 Certificate of Compliance null and void filed 7–2–85 (Register 85, No. 27).
3. Amendment filed 9–27–85; effective tenth day thereafter (Register 85, No. 39).
4. Amendment of subsection (d) filed 10–11–85; effective upon filing (Register 85, No. 44).
5. Certificate of Compliance as to 6–24–85 order transmitted to OAL 9–30–85 and filed 11–1–85 (Register 85, No. 44).
6. Amendment of subsections (b) and (c) filed 6–22–87; operative 6–22–87 (Register 87, No. 27).
7. Amendment of subsection (c) filed 10–15–90 as an emergency; operative 10–15–90 (Register 90, No. 46). A Certificate of Compliance must be transmitted to OAL by 2–12–91 or emergency language will be repealed by operation of law on the following day.
8. Reinstatement of section as it existed prior to emergency amendment filed 10–15–90 by operation of Government Code section 11346.1(f) (Register 91, No. 49).
9. Amendment of subsection (f) and NOTE and new subsection (i) filed 7–8–92; operative 7–8–92 pursuant to Fish and Game Code section 215 (Register 92, No. 28).
10. Change without regulatory effect amending subsection (d) filed 7–24–2001 pursuant to section 100, title 1, California Code of Regulations (Register 2001, No. 30).

§ 355. Weapons and Ammunition Authorized for the Taking of Big Game.

NOTE: Authority cited: Sections 200, 202, and 203, Fish and Game Code. Reference: Sections 200–203.1, 206, 207, 211–222, and 3950, Fish and Game Code.

HISTORY

1. Amendment filed 6–5–72; effective thirtieth day thereafter (Register 72, No. 24). For prior history, see Register 70, No. 23.
2. Amendment of subsection (d) filed 5–11–79; designated effective 7–1–79 (Register 79, No. 19).

14. Amendment filed 6–26–96; operative 7–1–96 pursuant to section 11343.4(d) (Register 96, No. 26).
15. Amendment filed 6–26–97; operative 6–26–97 pursuant to Fish and Game Code sections 202 and 215 (Register 97, No. 26).
16. Amendment filed 7–1–98; operative 7–1–98 pursuant to Fish and Game Code sections 202 and 215 (Register 98, No. 27).
17. Amendment filed 6–2–99; operative 6–2–99 pursuant to Fish and Game Code sections 202 and 215 (Register 99, No. 23).
18. Editorial correction of subsection (a)(4)(D)1.. (Register 2000, No. 26).
19. Amendment filed 6–27–2000; operative 6–27–2000 pursuant to Fish and Game Code sections 202 and 205 (Register 2000, No. 26).
20. Amendment of subsections (b)(1)(D), (b)(2)(D), (b)(3)(D), (b)(5)(D), (b)(7)(D), (b)(11)(D), (b)(12)(D) and (b)(26)(D) filed 5–21–2001; operative 6–1–2001 pursuant to Fish and Game Code sections 202 and 215 (Register 2001, No. 21).

§ 362. Nelson Bighorn Sheep.

(a) Areas:

(1) Zone 1—Marble/Clipper Mountains: That portion of San Bernardino County beginning at the intersection of Kelbaker Road and the National Trails Highway; north on Kelbaker Road to the junction with Interstate Highway 40; east on Interstate Highway 40 to the intersection with National Trails Highway; southwest on National Trails Highway to junction with Kelbaker Road.

(2) Zone 2—Kelso Peak and Old Dad Mountains: That portion of San Bernardino County beginning at the intersection of Kelbaker Road and the Union Pacific Railroad in Kelso; southwest along the Union Pacific Railroad to intersection with unnamed road at Crucero; north on unnamed road to the junction with Rasor Road; northwest on Rasor Road to the junction with Interstate Highway 15; northeast on Interstate Highway 15 to the intersection with Cima Road; south on Cima Road to the intersection with the Union Pacific Railroad in Cima; southwest on the Union Pacific Railroad to the intersection with Kelbaker Road in Kelso.

(3) Zone 3—Clark and Kingston Mountain Ranges: That portion of San Bernardino and Inyo counties beginning at the intersection of Interstate Highway 15 and California State Highway 127 in Baker; north on California State Highway 127 to the junction with Old Spanish Gentry Road on Tecopa; southeast on Old Spanish Gentry Road to the junction with Furnace Creek Road; southeast on Furnace Creek Road to the junction with Mesquite Valley Road; north on Mesquite Valley Road to Old Spanish Trail Highway; north and east on Old Spanish Trail Highway to California/Nevada state line; southeast on California/Nevada state line to the intersection with Interstate Highway 15; southwest on Interstate Highway 15 to the junction with California State Highway 127.

(4) Zone 4—Orocopia Mountains: That portion of Riverside County beginning at the intersection of Interstate Highway 10 and Cottonwood Springs Road; east on Interstate Highway 10 to the junction with Red Cloud Mine Road; south on Red Cloud Mine Road to the junction with the Eagle Mountain Mining Railroad; southwest on the Eagle Mountain Mining Railroad to the junction with the Bradshaw Trail; southwest on the Bradshaw Trail to the Intersection with the Coachella Canal; west along the Coachella Canal to the junction with Box Canyon Road; northeast on Box Canyon Road to the junction with Cottonwood Springs Road; north on Cottonwood Springs Road to the intersection with Interstate Highway 10.

(5) Zone 5—San Gorgonio Wilderness: That portion of Riverside and San Bernardino counties beginning at the intersection of Interstate Highway 10 and California State Highway 62, west on Interstate Highway 10 to the junction with California State Highway 30; north on California State Highway 30 to the junction with California State Highway 38; east and north on California State Highway 38 to the junction with Forest Service Route 1N01; east on Forest Service Route 1N01 to its joining with Pipes Road; east on Pipes Road to the junction with Pioneertown Road; southeast on Pioneertown Road to the junction with California State Highway 62; southwest on California State Highway 62 to the intersection with Interstate Highway 10.

(6) Zone 6—Sheep Hole Mountains: That portion of San Bernardino County beginning at the junction of California State Highway 62 and Ironage Road; northwest on Ironage Road to the intersection with Amboy Road; north on Amboy Road to the intersection with National Trails Highway; east on National Trails Highway to the junction with Saltus Road; southeast on Saltus Road to the junction with unnamed road in Saltus that runs through Cadiz Valley; southeast on unnamed road to the intersection with California State Highway 62; west on California State Highway 62 to the junction with Ironage Road.

(b) Seasons:

(1) Fund–raising Hunts: The holder of the fund–raising license tag issued pursuant to subsection 4902(d) of the Fish and Game Code may hunt:

(A) Zones 1 through 4, and 6: Beginning the first Saturday in November and extending through the first Sunday in February.

(B) Zone 5: Beginning the third Saturday in November and extending through the third Sunday in February.

(2) Except as provided in subsection 362(b)(1), the Nelson bighorn sheep season in the areas described in subsection 362(a) shall be defined as follows:

(A) Zones 1 through 4, and 6: The first Saturday in December and extend through the first Sunday in February.

(B) Zone 5: The third Saturday in December and extend through the third Sunday in February.

(3) Except as specifically provided in section 362, the take of bighorn sheep is prohibited.

(c) Bag and possession Limit: One mature ram defined as follows: a male Nelson bighorn sheep (*Ovis canadensis nelsoni*) having at least one horn, the tip of which extends beyond a point in a straight line beginning at the front (anterior) edge of the horn base, and extending downward through the rear (posterior) edge of the visible portion of the eye and continuing downward through the horn. All reference points are based on viewing the ram directly from a 90 degree angle from which the head is facing. A diagram showing the correct viewing procedure shall be distributed by the department to each successful applicant.

(d) Number of License Tags:
two tags valid in Zone 1
four tags valid in Zone 2
two tags valid in Zone 3
one tag valid in Zone 4
two tags valid in Zone 5
one tag valid in Zone 6
two fund–raising license tags

(e) Distribution of License Tags:

(1) Fund–raising Nelson bighorn ram license tags: Two fund–raising license tags for the taking of mature Nelson bighorn rams shall be sold for the purpose of raising funds to manage bighorn sheep. The department may designate a nonprofit organization to sell this fund–raising tag. Any resident or nonresident is eligible to buy the tag. The purchaser of a fund–raising license tag shall complete a required hunter orientation program conducted by the department and meet the hunter education requirements for a hunting license. The fund–raising license tags are defined as follows:

(A) Open–zone fund–raising license tags: These fund–raising license tags are valid in any of the areas described in subsection 362(a).

(2) General Nelson bighorn ram license tags: The application form (2001 NELSON BIGHORN SHEEP DRAWING APPLICATION, LBR 1362, Rev. 4/2001, incorporated by reference herein) shall be made available to the public at license agents and regular offices of the department. Applicants must be California residents or nonresidents, at least 16 years of age, possessing a California hunting license valid during the bighorn ram season for which they are applying, and must not have been previously issued a bighorn license tag in California. Applicants must apply for only one designated zone. No person shall submit more than one application. Applicants shall submit the application with a nonrefundable processing fee of $6.50 to the Department of Fish and Game, License and Revenue Branch, 3211 S Street, Sacramento, CA 95816. (Or by mail to PO Box 989041, West Sacramento, CA 95798–9041). Appli-

cations must be received before the close of business on the first business day after June 1. Incomplete applications and applications submitted without the appropriate processing fee will not be included in the drawing. Successful applicants and a list of alternates for each zone shall be determined by drawing within 10 calendar days following the application deadline date. If the drawing is delayed due to circumstances beyond the department's control, the department shall conduct the drawing at the earliest date possible. No more than one nonresident shall be selected to receive a general license tag. Unsuccessful applicants will not be notified. Successful applicants will be mailed notification as soon as practical. Upon receipt of the notification, the applicant shall submit the appropriate tag fee, either $261.50 for a resident or $500.00 for a nonresident, to the Department of Fish and Game, License and Revenue Branch, 3211 S Street, Sacramento, CA 95816. The tag fee shall be received by the department by the close of the business day on the Monday following the second Saturday in July. Should the quota for each zone remain unfilled after that date, the alternate lists shall be used. Successful applicants shall be issued tags only after successfully completing the required hunter orientation program conducted by the department.

(f) Conditions:

(1) Only persons possessing valid Nelson bighorn ram license tags are entitled to hunt bighorn sheep. Tags shall not be transferable and are valid only in the zone or zones specified.

(2) Individuals awarded a fund–raising license tag and all successful applicants for general license tags shall attend and successfully complete a mandatory hunter orientation program. Licensed guides employed by successful applicants and the fund–raising license tag buyer shall accompany their clients to this orientation program.

(3) All tags must be returned to the department within 10 days after the close of the season, even though the tagholder may not have killed a Nelson bighorn ram.

(4) Nelson bighorn rams shall only be taken between one–half hour before sunrise and one–half hour after sunset.

(5) Only methods specified in sections 353 and 354, Title 14, CCR, for taking bighorn sheep may be used.

(6) Each tagholder shall possess a spotting telescope capable of magnification of 15 power (15X), which is not affixed to a rifle, while hunting.

(7) Tags must be completed and attached to the carcass of a bighorn ram immediately after the animal is killed.

(8) Successful general tagholders shall present the head and edible portion of the carcass of a bighorn ram to the department's checking station within 48 hours after killing the animal. All successful tagholders shall notify the department's Bishop office by telephone at (760) 872–1171 or (760) 240–1372 within 24 hours of killing the animal and arrange for the head and carcass to be examined.

(9) All successful bighorn sheep tagholders shall have their tags validated and make the horns of each ram available to the department to be permanently marked in the manner prescribed by the department for identification purposes within 48 hours of killing the animal. The purpose of the permanent marking shall be to identify Nelson bighorn rams which were legally taken and which may be transported and possessed outside the areas described in subsection 362(a).

(10) The department reserves the right to take and use any part of the tagholder's bighorn ram, except the horns, for biological analysis as long as no more than one pound of edible meat is removed.

(11) All tagholders will be notified by mail as to whether they will be required to report to the department before hunting and upon completion of hunting. The notification shall contain procedures for reporting, including appropriate methods of contacting the department.

(12) The tagholder shall surrender his tag to an employee of the department for any or all of the following reasons:

(A) Any act on the part of the tagholder which violates any of the provisions of the Fish and Game Code, or any regulations of the commission.

(B) Any act on the part of the tagholder which endangers the person or property of others.

The decision of the department in such respects shall be final and binding upon the tagholder.

NOTE: Authority cited: Sections 200, 202, 203, 220, 1050 and 4902, Fish and Game Code. Reference: Sections 200, 202, 203, 203.1, 207, 1050, 3950 and 4902, Fish and Game Code.

HISTORY

1. New section filed 6–22–87; operative 6–22–87 (Register 87, No. 27). For history of former section 362, see Register 81, No. 20.
2. Amendment of subsections (d)–(f) filed 5–31–88; operative 5–31–88 (Register 88, No. 23).
3. Amendment of subsections (d) and (e) filed 6–22–90; operative 6–22–90 pursuant to section 215, Fish and Game Code (Register 90, No. 34).
4. Amendment filed 6–28–91; operative 6–28–91 (Register 91, No. 42).
5. Amendment of subsections (a)–(b), (d)–(e) filed 7–8–92; operative 7–8–92 pursuant to Fish and Game Code section 215 (Register 92, No. 28).
6. Amendment of subsections (b)(1), (d), (e)(1), (e)(2) and (f)(2) filed 6–23–93; operative 6–23–93 pursuant to Fish and Game Code sections 202 and 215 (Register 93, No. 26).
7. Amendment filed 7–13–94; operative 7–13–94 pursuant to sections 202 and 215, Fish and Game Code (Register 94, No. 28).
8. Amendment of subsections (d), (e)(1)(B), (e)(2) and NOTE filed 6–9–95; operative 6–9–95 pursuant to Government Code section 11343.4(d) (Register 95, No. 23).
9. Amendment filed 6–26–96; operative 7–1–96 pursuant to section 11343.4(d) (Register 96, No. 26).
10. Amendment of subsections (b)(1), (d) and (e)(1), repealer of subsection (e)(1)(B) and amendment of subsection (e)(2) filed 6–26–97; operative 6–26–97 pursuant to Fish and Game Code sections 202 and 215 (Register 97, No. 26).
11. Amendment filed 7–1–98; operative 7–1–98 pursuant to Fish and Game Code sections 202 and 215 (Register 98, No. 27).
12. Amendmentof subsections (d), (e)(2) and (f)(8) filed 6–2–99; operative 6–2–99 pursuant to Fish and Game Code sections 202 and 215 (Register 99, No. 23).
13. Amendment filed 6–27–2000; operative 6–27–2000 pursuant to Fish and Game Code sections 202 and 205 (Register 2000, No. 26).
14. Editorial correction of subsection (e)(2) (Register 2001, No. 10).
15. Change without regulatory effect amending subsection (e)(2) filed 3–7–2001 pursuant to section 100, title 1, California Code of Regulations (Register 2001, No. 10).
16. Amendment of subsections (d)–(e)(1)(A) filed 5–21–2001; operative 6–1–2001 pursuant to Fish and Game Code sections 202 and 215 (Register 2001, No. 21).

§ 363. Pronghorn Antelope.

The Lava Beds National Monument and Federal and State Game Refuges lying within the hunt boundary are closed to pronghorn antelope hunting, except for the state's Hayden Hill (1S) and Blacks Mountain (1F) game refuges in Lassen County and the Clear Lake National Wildlife Refuge in Modoc County. Refer to subsection 363(b)(5) for special conditions for permission to enter and hunt pronghorn antelope in the Clear Lake National Wildlife Refuge.

(a) Zone 1—Mount Dome:

(1) Area: That portion of Siskiyou County within a line beginning at the junction of Interstate 5 and the California–Oregon state line; east along the California–Oregon state line to the Ainsworth Corners–Lava Beds National Monument Road; south along the Ainsworth Corners–Lava Beds National Monument Road to the Mammoth Crater–Medicine Lake Road; southwest along the Mammoth Crater–Medicine Lake Road to the Medicine Lake–Telephone Flat Road; east and south along the Medicine Lake–Telephone Flat Road to the Telephone Flat–Bartle Road; southwest along the Telephone Flat–Bartle Road to Highway 89; west along Highway 89 to Interstate 5; north along Interstate 5 to the California–Oregon state line to the point of beginning.

(2) Seasons:

(A) The general season shall open on the Saturday following the third Wednesday in August and continue for nine consecutive days.

(B) The archery only season shall open 14 days prior to the general season and continue for nine consecutive days.

(3) Bag and Possession Limit: One pronghorn antelope in a license year.

(4) Number of License Tags:

(A) General Season: 3 buck tags and 0 doe tags.

(B) Archery Only Season: 1 buck tags and 0 doe tags.

(b) Zone 2—Clear Lake:

13. Amendment of subsection (c) filed 10–3–2001; operative 10–6–2001 pursuant to Government Code section 11343.4 (Register 2001, No. 40).

§ 507.1. Nontoxic Shot Requirement for Waterfowl, American Coot and Common Moorhen Hunting.

Only steel, nickle–plated steel, tin, copper–plated steel, zinc chromate–plated steel, zinc chloride–plated steel, bismuth–tin, tungsten matrix, tungsten polymer, tungsten iron, tungsten–nickel–iron or other nontoxic shot approved by the U.S. Fish and Wildlife Service may be used or possessed for waterfowl, American coot and common moorhen hunting statewide.

NOTE: Authority cited: Section 355, Fish and Game Code. Reference: Sections 355 and 356, Fish and Game Code; and Part 20, Title 50, Code of Federal Regulations, as amended July 21, 1987, 52 Fed. Reg. 27352.

HISTORY

1. New section filed 10–10–86; effective upon filing (Register 86, No. 41). For history of former section, see Register 85, No. 40.
2. Amendment filed 10–9–87; operative 10–9–87 (Register 87, No. 42).
3. Amendment of subsections (a) and (b) filed 10–5–88; operative 10–5–88 (Register 88, No. 41).
4. Amendment of subsections (a) and (b) filed 10–13–89; operative 10–13–89 pursuant to Fish and Game Code Section 355 (Register 89, No. 42).
5. Amendment of subsections (a) and (b) filed 11–15–90; operative 11–15–90 pursuant to Fish and Game Code section 355 (Register 91, No. 3).
6. Amendment of section heading, and repealer and new text filed 11–4–93; operative 11–4–93 pursuant to Fish and Game Code sections 202 and 215 (Register 93, No. 45).
7. Amendment of section heading and section filed 12–23–94; operative 1–23–95 (Register 94, No. 51).
8. Amendment filed 10–3–2001; operative 10–6–2001 pursuant to Government Code section 11343.4 (Register 2001, No. 40).

§ 507.5. Scull Boats.

Migratory game birds may not be taken by a scull boat or similar watercraft while under motorized power. The motor shall be removed from its mountings before any take or approach is attempted.

This section shall not prohibit shooting migratory game birds from scull boats or similar watercraft with motor attached if beached or anchored; nor shall it prohibit the use of a motor for the sole purpose of picking up dead or injured birds.

NOTE: Authority and reference cited: Migratory Bird Treaty Act and Section 355, Fish and Game Code.

HISTORY

1. New section filed 8–24–71, designated effective upon filing (Register 71, No. 35).

§ 508. Feeding of Migratory Waterfowl.

NOTE: Authority cited: Sections 240, 355 and 3806, Fish and Game Code. Reference: Sections 240, 355 and 3806, Fish and Game Code.

HISTORY

1. Amendment of subsections (b) and (c) filed 7–28–77; effective thirtieth day thereafter (Register 77, No. 31).
2. Amendment of NOTE filed 10–5–81; effective thirtieth day thereafter (Register 81, No. 41).
3. Amendment filed 7–28–88; operative 7–28–88 (Register 88, No. 33).
4. Amendment of subsection (b)(3) filed 7–11–89; operative 7–11–89 (Register 89, No. 28).
5. Repealer filed 9–23–96; operative 9–23–96 pursuant to Fish and Game Code sections 202 and 215 (Register 96, No. 39).

§ 509. Concurrence with Federal Regulations.

The regulations adopted by the United States through its Secretary of Interior under the Migratory Bird Treaty Act, as amended annually in Part 10, subparts A and B, and Part 20, Title 50, Code of Federal Regulations, are hereby adopted and made a part of this Title 14 except where said federal regulations are less restrictive than the provisions of Chapter 7 of this Title 14 (sections 500–509), the provisions of Chapter 7 prevail.

NOTE: Authority cited: Section 355, Fish and Game Code. Reference: Part 10, subparts A and B, and Part 20, Title 50, CFR, amended Sept. 18, 1987, 52 Fed. Reg. 35248; and Sections 355 and 356, Fish and Game Code.

HISTORY

1. Amendment filed 9–4–75; effective upon filing (Register 75, No. 36). For prior history, see Register 74, No. 35.
2. Amendment filed 8–31–76; effective upon filing (Register 76, No. 36).
3. Amendment filed 9–7–77; designated effective upon filing (Register 77, No. 37).
4. Amendment filed 8–31–78; designated effective upon filing (Register 78, No. 35).
5. Amendment filed 9–26–79; effective upon filing (Register 79, No. 39).
6. Amendment filed 9–23–80; designated effective 10–1–80 (Register 80, No. 39).
7. Amendment filed 10–5–81; effective thirtieth day thereafter (Register 81, No. 41).
8. Amendment filed 10–14–82; effective upon filing (Register 82, No. 42).
9. Amendment filed 10–7–83; effective upon filing (Register 83, No. 41).
10. Amendment filed 10–12–84; effective upon filing (Register 84, No. 41).
11. Amendment filed 10–11–85; effective upon filing (Register 85, No. 44).
12. Amendment filed 10–10–86; effective upon filing (Register 86, No. 41).
13. Amendment filed 10–2–87; operative 10–2–87 (Register 87, No. 41).
14. Amendment filed 10–5–88; operative 10–5–88 (Register 88, No. 41).
15. Amendment filed 10–13–89; operative 10–13–89 pursuant to Fish and Game Code section 355 (Register 89, No. 42).
16. Amendment filed 11–15–90; operative 11–15–90 pursuant to Fish and Game Code section 355 (Register 91, No. 3).
17. Amendment filed 11–5–92; operative 11–5–92 pursuant to Fish and Game Code section 202 and 215 (Register 92, No. 45).
18. Amendment filed 11–4–93; operative 11–4–93 pursuant to Fish and Game Code section 202 and 215 (Register 93, No. 45).

§ 510. State Duck Stamp.

Any adult license holder taking ducks, geese, or brant must have a current state duck stamp affixed to their license.

NOTE: Authority cited: Migratory Bird Treaty Act and Section 355, Fish and Game Code. Reference: Migratory Bird Treaty Act and Sections 355 and 3700, Fish and Game Code.

HISTORY

1. New section filed 8–24–71; designated effective upon filing (Register 71, No. 35).
2. Repealer and new section filed 10–5–81; effective thirtieth day thereafter (Register 81, No. 41).

Chapter 8. Wildlife and Public Shooting Areas

§ 550. Regulations for General Public Use Activities on All State Wildlife Areas Listed Below.

(a) State Wildlife Areas:

(1) Antelope Valley Wildlife Area (Sierra County) (Type C);

(2) Ash Creek Wildlife Area (Lassen and Modoc counties) (Type B);

(3) Bass Hill Wildlife Area (Lassen County), including the Egan Management Unit (Type C);

(4) Battle Creek Wildlife Area (Shasta and Tehama counties);

(5) Big Lagoon Wildlife Area (Humboldt County) (Type C);

(6) Big Sandy Wildlife Area (Monterey and San Luis Obispo counties) (Type C);

(7) Biscar Wildlife Area (Lassen County) (Type C);

(8) Buttermilk Country Wildlife Area (Inyo County) (Type C);

(9) Butte Valley Wildlife Area (Siskiyou County) (Type B);

(10) Cache Creek Wildlife Area (Colusa and Lake counties), including the Destanella Flat and Harley Gulch management units (Type C);

(11) Camp Cady Wildlife Area (San Bernadino County) (Type C);

(12) Cantara/Ney Springs Wildlife Area (Siskiyou County) (Type C);

(13) Cedar Roughs Wildlife Area (Napa County) (Type C);

(14) Cinder Flats Wildlife Area (Shasta County) (Type C);

(15) Collins Eddy Wildlife Area (Sutter and Yolo counties) (Type C);

(16) Colusa Bypass Wildlife Area (Colusa County) (Type C);

(17) Coon Hollow Wildlife Area (Butte County) (Type C);

(18) Cottonwood Creek Wildlife Area (Merced County), including the Upper Cottonwood and Lower Cottonwood management units (Type C);

(19) Crescent City Marsh Wildlife Area (Del Norte County);

(20) Crocker Meadow Wildlife Area (Plumas County) (Type C);

(21) Daugherty Hill Wildlife Area (Yuba County) (Type C);

(22) Decker Island Wildlife Area (Solano County) (Type C);

(23) Doyle Wildlife Area (Lassen County) (Type C);

(24) Dutch Flat Wildlife Area (Modoc County) (Type C);

(25) East Walker River Wildlife Area (Mono County) (Type C);
(26) Eel River Wildlife Area (Humboldt County) (Type C);
(27) Elk Creek Wetlands Wildlife Area (Del Norte County);
(28) Elk River Wildlife Area (Humboldt County) (Type C);
(29) Eureka Slough Wildlife Area (Humboldt County);
(30) Fay Canyon Wildlife Area (Alpine County) (Type C);
(31) Fay Slough Wildlife Area (Humboldt County) (Type C);
(32) Feather River Wildlife Area (Sutter and Yuba counties), including the Abbott Lake, Lake of the Woods, Marysville, Morse Road, Nelson Slough, O'Connor Lakes, Shanghai Bend, and Star Bend management units (Type C);
(33) Fremont Weir Wildlife Area (Yolo County) (Type C);
(34) Grass Lake Wildlife Area (Siskiyou County) (Type C);
(35) Gray Lodge Wildlife Area (Butte and Sutter counties) (Type A);
(36) Green Creek Wildlife Area (Mono County) (Type C);
(37) Grizzly Island Wildlife Area (Solano County), including the Cordelia Slough, Crescent (Type A), Gold Hills (Type B), Goodyear Slough (Type B), Grey Goose (Type C), Grizzly Island (Type A), Island Slough (Type B), Joice Island (Type A), and Montezuma Slough management units;
(38) Hallelujah Junction Wildlife Area (Lassen and Sierra counties) (Type C);
(39) Heenan Lake Wildlife Area (Alpine County) (Type C);
(40) Hill Slough Wildlife Area (Solano County);
(41) Honey Lake Wildlife Area (Lassen County) (Type B);
(42) Hope Valley Wildlife Area (Alpine County) (Type C);
(43) Horseshoe Ranch Wildlife Area (Siskiyou County) (Type C);
(44) Imperial Wildlife Area (Imperial County), including the Wister Management Unit (Type A) and Finney Ramer Management Units (Type C);
(45) Indian Tom Wildlife Area (Siskiyou County) (Type C);
(46) Indian Valley Wildlife Area (Lake County) (Type C);
(47) Kelso Peak and Old Dad Mountains Wildlife Area (San Bernardino County) (Type C);
(48) Kinsman Flat Wildlife Area (Madera County) (Type C);
(49) Knoxville Wildlife Area (Napa and Yolo counties) (Type C);
(50) Laguna Wildlife Area (Sonoma County) (Type C);
(51) Lake Berryessa Wildlife Area (Napa County) (Type C);
(52) Lake Earl Wildlife Area (Del Norte County) (Type C);
(53) Lake Sonoma Wildlife Area (Sonoma County) (Type C);
(54) Little Panoche Reservoir Wildlife Area (Fresno County) (Type C);
(55) Los Banos Wildlife Area (Merced County) (Type A);
(56) Lower Sherman Island Wildlife Area (Sacramento County) (Type C);
(57) Mad River Slough Wildlife Area (Humboldt County) (Type C);
(58) Marble Mountains Wildlife Area (San Bernardino County) (Type C);
(59) Mendota Wildlife Area (Fresno County) (Type A);
(60) Merrill's Landing Wildlife Area (Tehama County) (Type C);
(61) Miner Slough Wildlife Area (Solano County) (Type C);
(62) Monache Meadows Wildlife Area (Tulare County) (Type C);
(63) Morro Bay Wildlife Area (San Luis Obispo County) (Type C);
(64) Moss Landing Wildlife Area (Monterey County) (Type C);
(65) Mouth of Cottonwood Creek Wildlife Area (Shasta and Tehama counties) (Type C);
(66) Mud Lake Wildlife Area (Siskiyou County) (Type C);
(67) Napa–Sonoma Marshes Wildlife Area (Solano, Napa, and Sonoma counties), including the American Canyon, Coon Island, Dutchman Slough, Huichica Creek, Napa River, Ringstrom Bay, Sonoma Creek, Tolay Creek, White Slough, and Wingo management units (All Type C, except White Slough);
(68) North Grasslands Wildlife Area (Merced and Stanislaus counties), including the China Island, Gadwall, and Salt Slough management units (Type A);
(69) O'Neill Forebay Wildlife Area (Merced County) (Type C);
(70) Oroville Wildlife Area (Butte County), including the Thermalito Afterbay Management Unit (Type C);
(71) Petaluma Marsh Wildlife Area (Marin and Sonoma counties), including the Black John Slough, Burdell, Day Island, Green Point, Novato Creek, Petaluma River, Point Sonoma, and Rush Creek management units (Type C);
(72) Pickel Meadow Wildlife Area (Mono County (Type C));
(73) Pine Creek Wildlife Area (Modoc County) (Type C);
(74) Point Edith Wildlife Area (Contra Costa County) (Type C);
(75) Putah Creek Wildlife Area (Solano County) (Type C);
(76) Rector Reservoir Wildlife Area (Napa County) (Type C);
(77) Red Lake Wildlife Area (Alpine County) (Type C);
(78) Sacramento Bypass Wildlife Area (Yolo County) (Type C);
(79) Sacramento River Wildlife Area (Butte, Colusa, and Glenn counties) (Type C);
(80) San Felipe Valley Wildlife Area (San Diego County) (Type C);
(81) San Jacinto Wildlife Area (Riverside County) (Type A);
(82) San Luis Obispo Wildlife Area (San Luis Obispo County);
(83) San Luis Reservoir Wildlife Area (Merced County) (Type C);
(84) San Pablo Bay Wildlife Area (Marin and Sonoma counties) (Type C);
(85) Santa Rosa Wildlife Area (Riverside County) (Type C);
(86) Shasta Valley Wildlife Area (Siskiyou County) (Type B);
(87) Sheepy Ridge Wildlife Area (Siskiyou County) (Type C);
(88) Silver Creek Wildlife Area (Lassen County) (Type C);
(89) Slinkard–Little Antelope Wildlife Area (Mono County) (Type C);
(90) Smithneck Creek Wildlife Area (Sierra County) (Type C);
(91) South Fork Wildlife Area (Kern County) (Type C);
(92) Spannus Gulch Wildlife Area (Siskiyou County) (Type C);
(93) Spenceville Wildlife Area (Yuba and Nevada counties) (Type C);
(94) Surprise Valley Wildlife Area (Modoc County) (Type C);
(95) Sutter Bypass Wildlife Area (Sutter County) (Type C);
(96) Tehama Wildlife Area (Tehama County) (Type C);
(97) Truckee River Wildlife Area (Placer and Nevada counties), including the Boca, Polaris, Union Ice, and West River management units (Type C);
(98) Upper Butte Basin Wildlife Area (Butte and Glenn counties), including the Howard Slough, Little Dry Creek, and Llano Seco management units (Type A);
(99) Volta Wildlife Area (Merced County) (Type A);
(100) Walker River Wildlife Area (Mono County) (Type C);
(101) Waukell Creek Wildlife Area (Del Norte County) (Type C);
(102) Warner Valley Wildlife Area (Plumas County) (Type C);
(103) West Hilmar Wildlife Area (Merced and Stanislaus counties) (Type C);
(104) White Slough Wildlife Area (San Joaquin County) (Type C);
(105) Willow Creek Wildlife Area (Lassen County) (Type B);
(106) Yolo Bypass Wildlife Area (Yolo County).

(b) Area Regulations:

(1) Regional Manager's Authority: The regional manager shall have the authority to regulate public use of State wildlife areas where such use is not provided for in these regulations or in sections 551 and 552 of this title.

(2) Entry Restrictions. The department may limit the number of persons entering any area listed in section 550 or 551 of this title during any period for safety reasons, to reduce crowding, to provide for the limited take of a species, or may close portions of areas or close areas entirely to public entry or to specific activities. No person shall enter an area that has been closed to the public, except by written permission of the regional manager. On wildlife areas where entry and exit sites are designated by the department, no person shall enter or leave except at designated sites.

(3) Procedures for Issuing Entry Permits. In the event that the department elects to limit the number of hunters, trappers, or other users, entry permits will be issued on a first–come, first–served basis, or by a drawing to be held at a designated department office. The department shall inform

cants shall submit their deer tag application to the Department of Fish and Game. License and Revenue Branch, 3211 S Street, Sacramento, California 95816 (Or by mail to PO Box 949035, West Sacramento, CA 95798–9035). Applications must be received by the department by 5:00 p.m. on the first business day after June 1. Successful applicants will be selected by drawing within 10 calendar days following the application deadline date. If the drawing is delayed due to circumstances beyond the department's control, the department shall conduct the drawing at the earliest date possible. Successful and unsuccessful applicants will be notified by mail.

2. Except as noted in subsection 708(a)(2)(E) below, deer tags for A, B, C, and D zones and leftover drawing tags shall be issued upon request until each tag quota fills. If, on any given day, the number of applications received for any zone or hunt exceeds the number of available tags, the department may conduct a drawing for that zone or hunt.

(B) Application Forms: Except for permits and deer tags issued pursuant to sections 4181.5, 4188, and 4334 of the Fish and Game Code, application forms for deer tags (2002/2003 CALIFORNIA RESIDENT ONE–DEER TAG APPLICATION, LRB 1371A, rev. 4/2002; 2002/2003 CALIFORNIA NONRESIDENT ONE–DEER TAG APPLICATION, LRB 1371B, rev. 4/2002; 2002/2003 CALIFORNIA RESIDENT SECOND–DEER TAG APPLICATION, LRB 1371C, rev. 4/2002; 2002/2003 CALIFORNIA NONRESIDENT SECOND–DEER TAG APPLICATION, LRB 1371D, rev. 4/2002, incorporated by reference herein) shall be made available to the public at license agents and regular offices of the department.

(C) Application Procedures:

1. Applicants must be at least 12 years of age and possess a California resident or nonresident hunting license valid for the deer hunting season for which they are applying, except applicants for additional junior deer hunts, who must possess a California junior hunting license.

2. No more than six persons may apply together as a party. To be considered as a party, all applications must be stapled together with the party leader's application on top and mailed in one envelope. All party members' applications must show the same tag choices in the same order of preference, the total number of persons in the party, and the party leader's name and identification number. All party members shall be awarded tags according to the choices listed on the party leader's application. Incorrect or incomplete party applications will be separated and awarded tags on an individual basis.

3. Incomplete, incorrect, or ineligible applications will be rejected.

(D) Application Fee: The department shall require that the specified fee for a deer tag be paid as a prerequisite to obtaining a deer tag application. In addition to the tag fee, the department shall also charge a nonrefundable $2.00 processing fee for each deer tag application.

(E) Application Restrictions:

1. One–Deer Tag Application:

a. A person may use a one–deer tag application to apply for an X zone, additional hunt, or area–specific archery hunt tag issued by drawing as specified in subsection 708(a)(2)(A)1., above.

b. A person may use a one–deer tag application to apply for an A, B, C, or D zone tag or archery–only tag issued upon request.

c. A person may use a one–deer tag application to apply for any X zone, additional hunt, or area–specific archery hunt tag remaining on the first business day after July 1. Applications must be submitted to the department's License and Revenue Branch in Sacramento, except applications for area–specific archery hunt A–22, which may be submitted in person to the department's Los Alamitos or San Diego offices.

2. Second–Deer Tag Application:

a. A person may use a second–deer tag application to apply for an A or B zone tag or archery–only tag issued upon request.

b. A person may use a second–deer tag application to apply for any area–specific archery tag remaining on the first business day following July 1. Applications must be submitted to the License and Revenue Branch in Sacramento, except applications for area–specific archery hunt A–22, which may be submitted in person to the department's Los Alamitos or San Diego offices.

c. A person may use a second–deer tag application to apply for any C or D zone tag or additional hunt tag, except an additional junior hunt tag, remaining on the first business day following August 1. Applications may be submitted before that date to the License and Revenue Branch in Sacramento.

d. A person in possession of a valid junior hunting license, who has not used a one–deer tag application to apply for an additional junior hunt, may use a second–deer tag application to apply for an additional junior hunt tag issued by drawing as specified in subsection 708(a)(2)(A)1., above. A junior hunter may not submit more than one application for additional junior hunts.

e. No person shall submit more than one one–deer tag application and one second–deer tag application to the department during any one license year. Any person in violation of this subsection may be denied deer tags for the current and following license year.

(F) Deer Tag Exchange Fee: The department shall charge a nonrefundable $6.25 processing fee for exchanging a deer tag for a different zone or hunt.

(3) Tagging Requirements:

Immediately upon killing a deer, both portions of the deer license tag must be completely filled out and the date of kill permanently marked on the deer license tag. The deer license tag must be attached to the antlers of an antlered deer or to the ear of any other deer and kept attached during the open season and for 15 days thereafter. Except as otherwise provided, possession of any untagged deer shall be a violation (refer to Fish and Game Code, Section 4336).

(4) Tag Validation and Countersigning Requirements, and Transporting for the Purpose of:

Any person legally killing a deer in this state shall have the deer license tag validated and countersigned by a person authorized by the commission as described below in subsection 708(a)(8) before transporting such deer, except for the purpose of taking the deer to the nearest person authorized to countersign the license tag, on the route being followed from the point where the deer was taken (refer to Fish and Game Code, Section 4341).

(5) Deer Head Retention Requirements and Production Upon Demand:

Any person taking any deer in this state shall retain in their possession during the open season thereon and for 15 days thereafter, that portion of the head which in adult males normally bears the antlers, and shall produce the designated portion of the head upon the demand of any officer authorized to enforce the provisions of this regulation (refer to Fish and Game Code, Section 4302).

(6) Deer Tag Reporting Requirements:

Every person to whom a deer tag is issued shall return the completed report card portion to the department within thirty days of taking a deer.

(7) Deer Violations, Tag Forfeiture:

Any person who is convicted of a violation involving deer shall forfeit their current year deer license tags and no new deer license tags may be issued to that person during the then current hunting license year, and that person may not apply for a deer tag for the following license year (refer to Fish and Game Code, Section 4340).

(8) Deer and Elk Tags, Persons Authorized to Validate.

The following persons are authorized to validate or countersign deer and elk tags:

(A) State:

1. Fish and Game Commissioners
2. Employees of the Department of Fish and Game
3. Deputy Foresters
4. Assistant Deputy Foresters
5. Forest Rangers
6. Park Rangers—Grades 1, 2, 3, and 4
7. Supervising Plant Quarantine Inspectors

8. Junior, Intermediate and Senior Plant Quarantine Inspectors
9. Foresters
10. Fire Prevention Officers—Grades 1, 2, 3, and 4
11. Fire Captains
12. Fire Apparatus Engineers

(B) Federal: (FS = U.S. Forest Service, FWS = U.S. Fish & Wildlife Service, BLM = Bureau of Land Management)

1. Range Technicians (BLM)
2. Forest Supervisors (FS)
3. Assistant Forest Supervisors (FS)
4. District Forest Rangers (FS)
5. Foresters (FS, BLM)
6. Range Conservationists (FS, BLM)
7. Forest Engineers (FS, BLM)
8. Forestry Aides (FS)
9. Fire Control Officers or Aides (FS, BLM)
10. Clerks (FS, FWS, BLM) while on duty at their headquarters
11. Game Management Agents (FWS)
12. Wildlife Management Biologists (FS, FWS, BLM)
13. District Managers (BLM)
14. Information Specialists (BLM)
15. Area Managers (BLM)
16. Realty Specialists (BLM)
17. Natural Resource Specialists (BLM)
18. Engineers (BLM)
19. Engineering Technicians (BLM)
20. Recreation Resource Specialists (BLM)
21. Geologists (BLM)
22. Recreation Aides (BLM)
23. All Uniformed Personnel of the National Park Service
24. Commanding officers of any United States military installation or their designated personnel for deer taken on their reservation.
25. Postmasters
26. Post Office Station or Branch Manager for deer brought to their post office.

(C) Miscellaneous:

1. County firemen at and above the class of foreman for deer brought into their station.
2. Judges or Justices of all state and United States courts.
3. Notaries Public
4. Peace Officers
5. Nonsalaried police officers or deputy sheriffs while on scheduled duty in a city or county of appointment for deer brought to a police station or sheriff's office
6. Officers authorized to administer oaths
7. Owners, corporate officers, managers or operators of lockers or cold storage plants for deer brought to their place of business.

(D) No person may validate or countersign their own tag.

(b) Distribution of Bighorn Sheep License Tags:

(1) Fund–raising Nelson bighorn ram license tags: Two fund–raising license tags for the taking of mature Nelson bighorn rams shall be sold for the purpose of raising funds to manage bighorn sheep. The department may designate a nonprofit organization to sell this fund–raising tag. Any resident or nonresident is eligible to buy the tag. The purchaser of a fund–raising license tag shall complete a required hunter orientation program conducted by the department and meet the hunter education requirements for a hunting license. The fund–raising license tags are defined as follows:

(A) Open–zone fund–raising license tags: These fund–raising license tags are valid in any of the areas described in subsection 362(a).

(2) General Nelson bighorn ram license tags: The application form (2002 NELSON BIGHORN SHEEP DRAWING APPLICATION, LBR 1362, Rev. 4/2002, incorporated by reference herein) shall be made available to the public at license agents and regular offices of the department. Applicants must be California residents or nonresidents, at least 16 years of age, possessing a California hunting license valid during the bighorn ram season for which they are applying, and must not have been previously issued a bighorn license tag in California. Applicants must apply for only one designated zone. No person shall submit more than one application. Applicants shall submit the application with a nonrefundable processing fee of $6.75 to the Department of Fish and Game, License and Revenue Branch, 3211 S Street, Sacramento, CA 95816. (Or by mail to PO Box 989041, West Sacramento, CA 95798–9041). Applications must be received before 5:00 p.m. on the first business day after June 1. Incomplete applications and applications submitted without the appropriate processing fee will not be included in the drawing. Successful applicants and a list of alternates for each zone shall be determined by drawing within 10 calendar days following the application deadline date. If the drawing is delayed due to circumstances beyond the department's control, the department shall conduct the drawing at the earliest date possible. No more than one nonresident shall be selected to receive a general license tag. Unsuccessful applicants will not be notified. Successful applicants will be mailed notification as soon as practical. Upon receipt of the notification, the applicant shall submit the appropriate tag fee, either $270.25 for a resident or $500.00 for a nonresident, to the Department of Fish and Game, License and Revenue Branch, 3211 S Street, Sacramento, CA 95816. The tag fee shall be received by the department by 5:00 p.m. on the Monday following the second Saturday in July. Should the quota for each zone remain unfilled after that date, the alternate lists shall be used. Successful applicants shall be issued tags only after successfully completing the required hunter orientation program conducted by the department.

(3) Tagholder Responsibilities:

(A) Only persons possessing valid Nelson bighorn sheep license tags are entitled to hunt bighorn sheep. Tags shall not be transferable and are valid only in the zone or zones specified.

(B) Individuals awarded a fund–raising license tag and all successful applicants for general license tags shall attend and successfully complete a mandatory hunter orientation program. Licensed guides employed by successful applicants and the fund–raising license tag buyer shall accompany their clients to this orientation program.

(C) All successful bighorn sheep tagholders shall have their tags validated. All tags must be returned to the department within 10 days after the close of the season, even though the tagholder may not have killed a Nelson bighorn ram.

(D) Tags must be completed and attached to the carcass of a bighorn ram immediately after the animal is killed. All successful bighorn sheep tagholders shall have their tags validated.

(E) All tagholders will be notified by mail as to whether they will be required to report to the department before hunting and upon completion of hunting. The notification shall contain procedures for reporting, including appropriate methods of contacting the department.

(F) The tagholder shall surrender his tag to an employee of the department for any or all of the following reasons:

(1) Any act on the part of the tagholder which violates any of the provisions of the Fish and Game Code, or any regulations of the commission.

(2) Any act on the part of the tagholder which endangers the person or property of others. The decision of the department in such respects shall be final and binding upon the tagholder.

(c) Distribution of Pronghorn Antelope License Tags:

(1) The pronghorn antelope license tags shall be issued by drawing. Application forms (2002 RESIDENT ANTELOPE DRAWING APPLICATION, LRB 1363, Rev. 4/2002, incorporated by reference herein) shall be made available to the public at license agents and regular department offices. Each applicant must be a California resident, at least 12 years of age, and possess a California hunting license valid during the pronghorn antelope season for which they are applying. Applicants for buck pronghorn antelope license tags must not have been issued a buck pronghorn antelope license tag during the previous ten years. Applicants may apply for doe and junior hunt license tags every year. Applicants for the junior pronghorn antelope hunts must be California residents possessing a junior hunting license valid during the pronghorn antelope season

for which they are applying. No person shall submit more than one application for a pronghorn antelope license tag. No more than two persons shall apply together as a party. To be considered as a party, both persons must apply on the same application for the same tag choice. Incomplete applications and applications submitted without the appropriate processing fee will not be included in the drawing.

(2) Applicants shall submit the application with a nonrefundable processing fee of $6.75 for Single and $13.50 for Party to the Department of Fish and Game, License and Revenue Branch, 3211 S Street, Sacramento, CA 95816. Applications must be received before 5:00 p.m. on the first business day after June 1. Successful applicants and a list of alternates for each hunt shall be determined by drawing within 10 calendar days following the application deadline date. If the drawing is delayed due to circumstances beyond the department's control, the department shall conduct the drawing at the earliest date possible. In the event a party application is drawn for the last tag available for a hunt, the party will be split and the party leader (first person listed) as indicated on the application form shall be awarded the pronghorn antelope license tag. The party member shall become the first alternate for that hunt. Unsuccessful applicants will not be notified. Successful applicants and alternates will be mailed notification as soon as practical. Upon receipt of the notification the applicant or alternate shall submit an $95.75 tag fee to the Department of Fish and Game, License and Revenue Branch, 3211 S Street, Sacramento, CA 95816 (Or by mail to PO Box 989041, West Sacramento, CA 95798–9041). The tag fee shall be received by the department by 5:00 p.m. on the Monday following the second Saturday in July. Should the quota for each zone remain unfilled after that date, the alternate list shall be used. In the event only one pronghorn antelope license tag is available to an alternate, party applications will be split and the alternate tag shall be awarded to the party leader as indicated on the application form. Undistributed tags will be issued after the drawing. Any tags unclaimed by successful applicants after that date shall be awarded to paid alternates for that zone, on an individual basis, in the order drawn. Any remaining tags may be issued to paid alternates for other zones.

(3) Fund–raising License Tags: Fund–raising license tags for the taking of buck pronghorn antelope shall be offered for sale to raise funds for the management of pronghorn antelope. Any resident or nonresident is eligible to buy one of the fund–raising license tags. Bidders for and purchasers of fund–raising tags are exempt from the 10–year waiting period to purchase a buck pronghorn antelope fund–raising tag. The sale price of a fund–raising license tag includes the fee for processing and issuing a hunting license. The purchaser shall be issued the fund–raising license tag only after meeting the hunter education requirements for a hunting license.

(4) Tagholder Responsibilities:

(A) Only persons possessing valid pronghorn antelope license tags are entitled to hunt pronghorn antelope during these hunts. Tags shall not be transferable and are valid only in the area, season, and period specified on the tag.

(B) All tagholders must return the report card portion of their license tag to the department within one week after the close of the pronghorn antelope season, even though the tagholder may not have killed a pronghorn antelope.

(C) The holder of a pronghorn antelope license tag, immediately after killing a pronghorn antelope, shall fill out both parts of the tag and mark permanently the date of kill. The tag portion shall be immediately attached to a horn of buck pronghorn antelope or to an ear of doe pronghorn antelope and kept attached for 15 days after the close of the open season.

(D) The tagholder shall surrender his license tag to an employee of the Department of Fish and Game for any of the following reasons:

(1) Any act on the part of the tagholder which violates any of the provisions of the Fish and Game Code, or any regulations of this commission.

(2) Any act on the part of the tagholder which endangers the person or property of others. The decision of the Department of Fish and Game in such respects shall be final and binding upon the tagholder.

(d) Distribution of Elk License Tags:

(1) Three fund–raising license tags for the taking of elk bulls shall be offered for sale to raise funds for the management of elk. The department may designate a nonprofit organization or organizations to sell the fund–raising tags. Any resident or nonresident is eligible to buy one of the license tags. The purchase of fund–raising tags shall complete required hunter orientation programs conducted by the department and meet the hunter safety requirements for a hunting license.

(2) Application forms for elk tags (2002 RESIDENT ELK DRAWING APPLICATION, LRB 1364, Rev. 4/2002, incorporated by reference herein) shall be made available to the public at license agents and regular department offices. Each applicant must be a California resident at least 12 years of age and possess a California hunting license valid during the elk season for which he/she is applying. No person shall submit more than one application for an elk license tag. No more than two persons shall apply together as a party. To be considered as a party, both persons must apply on the same application for the same tag choice. Incomplete applications and applications submitted without the appropriate processing fee will not be included in the drawing.

(3) The elk hunting license tags shall be issued by drawing. Applicants shall submit the application with a nonrefundable $6.75 for Single and $13.50 for Party processing fee to the Department of Fish and Game, License and Revenue Branch, 3211 S Street, Sacramento, CA 95816 (Or by mail to PO Box 989041, West Sacramento, CA 95798–9041). Applications must be received before 5:00 p.m. on the first business day after June 1. In the event a party is drawn for the last tag available for a hunt, the party will be split and the party leader (first person listed) as indicated on the application form shall be awarded the elk tag. The party member shall become the first alternate for that hunt. Successful applicants and a list of alternates for each hunt will be determined by drawing within 10 calendar days following the application deadline date. If the drawing is delayed due to circumstances beyond the department's control, the department shall conduct the drawing at the earliest date possible. Unsuccessful applicants will not be notified. Successful applicants and alternates will be mailed notification as soon as practical. Upon receipt of the notification, the applicant or alternate shall send a $286.75 tag fee to the Department of Fish and Game, License and Revenue Branch, 3211 S Street, Sacramento, CA 95816. The tag fee shall be received by the department by 5:00 p.m. on the Monday following the second Saturday in July. Any tags unclaimed by successful applicants after that date shall be awarded to paid alternates for that hunt, on an individual basis, in the order drawn. Any remaining tags may be issued to paid alternates for other zones.

(4) Tagholder Responsibilities:

(A) All tagholders must return their license tags to the Department of Fish and Game within one week after the close of the elk season, even though the tagholder may not have killed an elk.

(B) License tags must be attached to the antler of an antlered elk, or to the ear of antlerless elk immediately after killing.

(C) Persons authorized to validate or countersign elk tags are listed in Section 708(a)(8). Elk tags must be countersigned before transporting such elk, except for the purpose of taking it to the nearest person authorized to countersign the license tag on the route being followed from the point where the elk is taken.

(D) Only persons possessing valid elk license tags are entitled to take elk. Tags are not transferrable and are valid only for the area and period specified.

(E) The tagholder shall surrender his tag to an employee of the Department of Fish and Game for any or all of the following reasons:

(1) Any act on the part of the tagholder which violates any of the provisions of the Fish and Game Code, or any regulations of the Commission made pursuant thereto.

(2) Any act on the part of the tagholder which endangers the person or property of others. The decision of the Department of Fish and Game shall be final.

(F) Elk may be taken on Santa Rosa Island pursuant to a permit issued by the department. For methods of take, see sections 353 and 354.

(e) Bear License Tags.

(1) Application for Bear License Tags:

(A) With the exception of permits and tags issued pursuant to section 4181 of the Fish and Game Code, all bear license tag applications shall be submitted on forms provided by the department.

(B) The department may require that the specified fee provided for in section 4751 of the Fish and Game Code for such bear license tags be paid as a prerequisite to obtaining a bear license tag application.

(C) The department shall charge a nonrefundable $2.00 processing fee for each bear tag application.

(D) Only one bear license tag application may be submitted to the department during any one license year. Any person who submits more than one bear license tag application may be denied bear license tags for the current license year.

(2) Distribution of bear tags: Applications for bear tags (2002/2003 CALIFORNIA RESIDENT BEAR TAG APPLICATION, LRB 1365A, rev. 4/2002; and 2002/2003 NONRESIDENT BEAR TAG APPLICATION, LRB 1365B, rev. 4/2002, incorporated by reference herein) shall be available to the public at license agents and regular offices of the department. Tags will be issued at regular department offices.

(3) Use of Guides: Any holder of a bear license tag who utilizes the services of a guide or guides shall verify that the guide is in possession of a valid guide's license and shall place the guide's license number on the bear license tag in the space provided.

(4) Use of Dogs: Any holder of a bear license tag who utilizes dogs to take bear shall so indicate on his bear license tag in the space provided.

(5) Validation of Bear Tags: Only Department of Fish and Game employees may validate bear tags (This provision supersedes section 4755 of the Fish and Game Code). Bear tags must be countersigned before transporting such bear except for the purpose of taking it to the nearest person authorized to countersign the license tag, on the route being followed from the point where the bear is taken.

(6) Return of Bear License Tags:

(A) Every person who takes a bear shall immediately return the report card portion of the bear license tag, after having the tag countersigned as required in (e) above. The tag may be presented to a department office/officer or returned through the United States Mail.

(B) Every person who is unsuccessful in taking bear shall return the report card portion of the bear license tags by February 1 of the current license year. The tag may be presented to a department office/officer or returned through the United States Mail.

(f) Application For and Use of Wild Pig License Tags:

(1) Any person, 12 years of age or older, who possesses a valid hunting license may procure wild pig license tags as specified in Section 4654 of the Fish and Game Code.

(2) Wild pig license tags will be sold to residents in packets of five. Nonresident wild pig license tags will be sold individually.

(3) Wild pig license tags are valid only during that portion of the current hunting license year in which wild pigs may be legally harvested as provided in subsection 368(a).

(4) Any person hunting wild pigs shall carry a wild pig license tag while hunting wild pigs, and upon the killing of any wild pig shall immediately fill out both parts of the tag, clearly mark the date of the kill and attach the tag to the carcass of the wild pig. The report card portion shall be immediately returned to the department.

(g) Accrual of Points for Big Game Drawings:

1. Any person applying for premium deer tags (X zones, Area–specific archery hunts, and additional hunts) who is unsuccessful in the big game drawing with their first choice shall receive a point.

2. Junior hunters applying for premium deer tags (X zones, Area–specific archery hunts, and additional hunts) may only accrue points based on their first deer tag application.

3. Any applicants for elk, pronghorn antelope or bighorn sheep hunts who are not awarded tags through the drawing will receive a point for that species.

NOTE: Authority cited: Sections 200, 202, 203, 213, 215, 219, 220, 331, 332, 1050, 1572, 4302, 4336, 4340, 4341 and 10502, Fish and Game Code. Reference: Sections 200–203.1, 206, 207, 211–222, 331, 332, 713, 1050, 1570–1572, 3950, 3951, 4302, 4330–4333, 4336, 4340, 4341, 4652–4655, 4657, 4750–4756, 4902, 10500 and 10502, Fish and Game Code.

HISTORY

1. New section filed 6–28–2002; operative 6–28–2002 pursuant to Fish and Game Code sections 202 and 215 (Register 2002, No. 26).

§ 710. Hunter Education Training Equivalency.

(a) The department may evaluate the quality and coverage of hunter education courses offered by other countries, their political subdivision, or by the Armed Forces of the United States. Upon satisfactory evidence that a course fully meets or exceeds the requirements of the California hunter education course, the department may issue to graduates of such courses a California Certificate of Equivalency. (NOTE: See section 3050 (a)(3) of the Fish and Game Code regarding hunter safety certificates from other states.)

(b) The department shall prepare a comprehensive hunter education equivalency examination, to be administered to qualified applicants. Pass/fail criteria will be established by the department. Qualification to take the equivalency examination must include affirmation that the applicant has not previously taken and failed the examination.

Applicants who successfully pass the equivalency examination will be issued a hunter education certificate of equivalency.

NOTE: Authority cited: Sections 1050, and 3050, Fish and Game Code. Reference: Sections 711, 1050, and 3049–3055, Fish and Game Code.

HISTORY

1. New section filed 3–17–71; designated effective 6–1–71 (Register 71, No. 12).
2. Repealer filed 4–7–76; effective thirtieth day thereafter (Register 76, No. 15).
3. New section filed 8–31–79 as an emergency; designated effective 9–1–79 (Register 79, No. 35). A Certificate of Compliance must be filed within 120 days or emergency language will be repealed on 12–29–79.
4. Certificate of Compliance filed 11–9–79 (Register 79, No. 45).
5. Repealer and new section filed 7–16–81; effective thirtieth day thereafter (Register 81, No. 29).
6. Editorial correction of NOTE filed 9–20–85; effective thirtieth day thereafter (Register 85, No. 38).
7. Amendment of subsection (b) filed 2–5–86; effective thirtieth day there after (Register 86, No. 6).
8. Amendment of subsection (a) and (b) and new subsection (c) filed 10–18–90; operative 11–17–90 (Register 90, No. 47).
9. Change without regulatory effect amending section heading and subsections (a) and (b) filed 3–28–96 pursuant to section 100, title 1, California Code of Regulations (Register 96, No. 13).

§ 711. Cold Storage/Frozen Food Locker Plant Records.

(a) Any person operating a cold storage plant or frozen food locker plant where game birds or game mammals, or parts thereof, taken pursuant to a hunting license are processed, preserved or stored, shall prepare and maintain the following records:

(1) name and address of residency of the individual who delivers the game bird or game mammal to the facility;

(2) name, address of residency and hunting license number, and tag number if applicable, of the individual who took the game bird or game mammal;

(3) location of kill—State_____ County_____ Deer Zone or Special Hunt Number_____;

(4) species; and

(5) date received.

(b) The records required by this section shall be maintained at the facility for a period of one year for each game bird or game mammal retained, and shall be open for inspection by wardens of the Department.

NOTE: Authority cited: Section 200, Fish and Game Code. Reference: Sections 200 and 3086, Fish and Game Code.

HISTORY

1. New section file 9–8–88; operative 9–8–88 (Register 88, No. 38). For history of former Section 711, see Registers 81, No. 29 and 73, No. 30.
2. Amendment of subsection (a)(4), repealer of subsection (a)(5), subsection renumbering and amendment of subsection (b) filed 6–28–2002; operative 6–28–2002 pursuant to Fish and Game Code sections 202 and 215 (Register 2002, No. 26).

APPENDIX 3

List of Plant and Animal Species of Special Concern,
Threatened or Endangered

Species of Special Concern

That Occur Within or Near the Marble Mountain (MM),
Kelso Peak/Old Dad Mountains (OD), Clark/Kingston Mountains (CK),
East Chocolate Mountains (EC), Orocopia Mountains(OR),
San Gorgonio Wilderness (SG), and Sheep Hole (SH) Mountain Management Units

Common Name	Scientific Name	Location
Desert Tortoise	*Xerobates (Gopherus) agassizi*	MM, OD, CK, EC, OR, SH
Coachella Valley Fringe Toed Lizard	*Uma inornata*	SG
Southern Rubber Boa	*Charina bottae umbratica*	SG
Swainson's Hawk	*Buteo Swainsoni*	OD
Least Bell's Vireo	*Vireo belli pusillus*	OD
Arizona Bell's Vireo	*Vireo belli arizonae*	EC
California Black Rail	*Laterallus jamaicensis coturniculus*	EC
Yuma Clapper Rail	*Rallus logirostris yumanensis*	EC, OR
Western Yellow-billed Cuckoo	*Coccyzus americanus occidentalis*	EC
Willow Flycatcher	*Empidonax traillii*	EC, SG
Gilded Northern Flicker	*Colaptes auratus chrysoides*	EC
Gila Woodpecker	*Melanerpes uropygialis*	EC
Elf Owl	*Micrathene whitneyi*	EC
Orocopia Sage	*Salvia greati*	MM, OR, SH
Parish's Daisy	*Erigeron parishii*	SG
California Dandelion	*Taraxacum californicum*	SG
Bear Valley Sandwort	*Arenaria ursina*	SG
Triple-ribbed Milk-vetch	*Astragalus tricarinatus*	SG
Cima Milk Vetch	*Astragalus cimae*	OD
Coachella Valley Milk-vetch	*Astragalus lentiginosus var coachellae*	SG
Cushenbury Buckwheat	*Eriogonum ovalifolium var vineum*	SG
Ash-gray Indian Paintbrush	*Castilleja cinerea*	SG
San Bernardino Blue Grass	*Poa atropurpurea*	SG

16. Amendment of subsection (a), relettering and amendment of former subsection (b) to subsection (c), and new subsection (b) filed 1–16–87; effective upon filing pursuant to Fish and Game Code section 215 (Register 87, No. 4).
17. Amendment of subsections (a)(17) and (b)(3) filed 2–26–88; operative 3–27–88 (Register 88, No. 13).
18. Amendment of subsection (a) filed 10–23–89; operative 11–22–89 (Register 89, No. 43).
19. Editorial correction of printing error inadvertently omitting text (Register 90, No. 38).
20. Renumbering: former (a)(8) through (a)(25) to (a)(11) through (a)(28) respectively; former (a)(26), (27), (28), (29), (30), (31); to (a)(32), (9), (31), (10), (29) and (30) respectively; renumbering (a)(25)(A) to (a)(29)(C); relettering former (a)(25)(B) to (a)(28)(A); renumbering (b)(1)–(5) to (b)(5), (6), (7), (9), (10) respectively; adding new (a)(4)(K)–(N), (a)(7)(H), (a)(8), (a)(8)(A), (a)(10)(B), (a)(13)(C), (a)(27)(I), (b)(1), (b)(1)(A), (b)(2), (b)(2)(A)–(C), (b)(3), (b)(3)(A), (b)(4), (b)(4)(A)–(B), (b)(6)(B)–(C), (b)(8), (b)(8)(A), (b)(9)(B), (b)(11), (b)(11)(A); nonsubstantive spelling corrections at (a)(4)(G), (J), (a)(5)(C), (a)(6)(B), (a)(7)(A), (E), (F), (a)(17)(B), (E), (G), (a)(18)(B), (a)(19)(A), (E), (a)(23)(A), (E), (a)(25)(B), (a)(32)(A), (F), (b)(7)(A), (c)(1)(A), (c)(3)(F), (c)(9)(A), (C), (E), (F), (c)(11)(A), (C), (c)(15)(A), (B); correction of printing error repeating (a)(5), (a)(5)(A), (a)(4), (a)(4)(A)–(J) filed 10–9–90; operative 11–8–90 (Register 90, No. 45).
21. New subsection (a)(4)(O) filed 4–7–92; operative 5–7–92 (Register 92, No. 15).
22. New subsections (a)(4)(P)–(Q) and subsection (b)(8)(A) and renumbering filed 12–1–92; operative 12–31–92 (Register 92, No. 49).
23. New subsection (a)(4)(B) and subsection relettering filed 6–11–93; operative 7–12–93 (Register 93, No. 24).
24. New subsection (a)(29) and subsection renumbering filed 12–28–93; operative 1–27–94 (Register 93, No. 53).
25. New subsections (b)(13)–(b)(13)(A) filed 7–14–94; operative 8–15–94 (Register 94, No. 28).
26. Editorial correction relocating subsection (b)(8)(B) to (b)(7)(B) (Register 94, No. 28).
27. Change without regulatory effect amending subsections (a)(4)(H), (a)(4)(J), (a)(13)(B), (a)(17)(C), (a)(17)(F), (a)(19)(A), (a)(22)(A), (a)(25)(A), (a)(27)(G), (a)(28)(A), (a)(33)(D), (a)(33)(G), (b)(1)(A), (b)(6)(C), (b)(8)(A), (c)(3)(D), (c)(3)(G), (c)(5)(A), (c)(9)(B) and (c)(14)(B) filed 2–10–95 pursuant to section 100, title 1, California Code of Regulations (Register 95, No. 6).
28. Change without regulatory effect amending subsections (a)(26)(A), (b)(10)(B) and (b)(12)(A) filed 10–3–95 pursuant to section 100, title 1, California Code of Regulations (Register 95, No. 40).
29. Change without regulatory effect amending subsections (a)(5)(A) and (C) and (a)(20)(B) filed 8–20–98 pursuant to section 100, title 1, California Code of Regulations (Register 98, No. 34).
30. Change without regulatory effect amending section and NOTE filed 6–7–2000 pursuant to section 100, title 1, California Code of Regulations (Register 2000, No. 44).
31. New subsection (a)(17)(D) and subsection relettering filed 11–7–2000; operative 12–7–2000 (Register 2000, No. 45).

§ 670.5. Animals of California Declared to Be Endangered or Threatened.

The following species and subspecies are hereby declared to be endangered or threatened, as indicated:

(a) Endangered:
(1) Crustaceans:
(A) California freshwater shrimp *(Syncaris pacifica)*
(B) Shasta crayfish *(Pacifastacus fortis)*
(2) Fishes:
(A) Bull trout *(Salvelinus confluentus)*
(B) Mohave tui chub *(Gila bicolor mohavensis)*
(C) Owens tui chub *(Gila bicolor snyderi)*
(D) Bonytail *(Gila elegans)*
(E) Colorado squawfish *(Ptychocheilus lucius)*
(F) Lost River sucker *(Deltistes luxatus)*
(G) Modoc sucker *(Catostomus microps)*
(H) Shortnose sucker *(Chasmistes brevirostris)*
(I) Razorback sucker *(Xyrauchen texanus)*
(J) Desert pupfish *(Cyprinodon macularius)*
(K) Owens pupfish *(Cyprinodon radiosus)*
(L) Unarmored threespine stickleback *(Gasterosteus aculeatus williams soni)*
(M) Winter run chinook salmon *(Oncorhynchus tshawytscha)*
(N) Coho salmon (*Oncorhynchus kisutch*) south of San Francisco Bay.
(3) Amphibians:
(A) Santa Cruz long–toed salamander *(Ambystoma macrodactylum croceum)*
(B) Desert slender salamander *(Batrachoseps aridus)*
(4) Reptiles:
(A) Coachella Valley fringe–toed lizard *(Uma inornata)*
(B) Blunt–nosed leopard lizard *(Gambelia silus)*
(C) San Francisco garter snake *(Thamnophis sirtalis tetrataenia)*
(5) Birds:
(A) California brown pelican *(Pelecanus occidentalis californicus)*
(B) California condor *(Gymnogyps californianus)*
(C) Bald eagle *(Haliaeetus leucocephalus)*
(D) American peregrine falcon *(Falco peregrinus anatum)*
(E) California clapper rail *(Rallus longirostris obsoletus)*
(F) Light–footed clapper rail *(Rallus longirostris levipes)*
(G) California least tern *(Sterna antillarum browni)*
(H) Western yellow–billed cuckoo *(Coccyzus americanus occidentalis)*
(I) Elf owl *(Micrathene whitneyi)*
(J) Great gray owl *(Strix nebulosa)*
(K) Least Bell's vireo *(Vireo bellii pusillus)*
(L) Inyo California towhee *(Pipilo crissalis eremophilus)*
(M) Willow flycatcher *(Empidonax traillii)*
(N) Arizona Bell's vireo *(Vireo bellii arizonae)*
(O) Gila woodpecker *(Melanerpes uropygialis)*
(P) Gilded northern flicker *(Colaptes auratus chrysoides)*
(Q) Belding's savannah sparrow *(Passerculus sandwichensis beldingii)*
(R) Marbled murrelet (*Brachyramphus marmoratus*)
(6) Mammals:
(A) Riparian brush rabbit (*Sylvilagus bachmani riparius*)
(B) Morro Bay kangaroo rat *(Dipodomys heermanni morroensis)*
(C) Giant kangaroo rat *(Dipodomys ingens)*
(D) Tipton kangaroo rat *(Dipodomys nitritoides nitratoides)*
(E) Fresno kangaroo rat *(Dipodomys nitritoides exilis)*
(F) Salt–marsh harvest mouse *(Reithrodontomys raviventris)*
(G) Amargosa vole *(Microtus californicus scirpensis)*
(H) California bighorn sheep (*Ovis canadensis californiana*)
(b) Threatened:
(1) Gastropods:
(A) Trinity bristle snail *(Monadenia setosa)*
(2) Fishes:
(A) Delta smelt (*Hypomesus transpacificus*)
(B) Cottonball Marsh pupfish *(Cyprinodon salinus milleri)*
(C) Rough sculpin *(Cottus asperrimus)*
(D) Spring–run chinook salmon (*Oncorhynchus tshawytscha*) of the Sacramento River drainage.
(3) Amphibians:
(A) Siskiyou mountain salamander *(Plethodon stormi)*
(B) Kern Canyon slender salamander *(Batrachoseps simatus)*
(C) Tehachapi slender salamander *(Batrachoseps stebbinsi)*
(D) Limestone salamander *(Hydromantes brunus)*
(E) Shasta salamander *(Hydromantes shastae)*
(F) Black toad *(Bufo exsul)*
(4) Reptiles:
(A) Desert tortoise *(Gopherus agassizzi)*
(B) Barefoot banded gecko *(Coleonyx switaki)*
(C) Southern rubber boa *(Charina bottae umbratica)*
(D) Alameda whipsnake *(Masticophis lateralis euryxanthus)*
(E) Giant garter snake *(Thamnophis couchi gigas)*
(5) Birds:
(A) Swainson's hawk *(Buteo swainsoni)*
(B) California black rail *(Laterallus jamaicensis coturniculus)*
(C) Yuma clapper rail *(Rallus longirostris yumanensis)*
(D) Greater sandhill crane *(Grus canadensis tabida)*
(E) Bank swallow *(Riparia riparia)*
(6) Mammals:
(A) San Joaquin antelope squirrel *(Ammospermophilus nelsoni)*
(B) Stephens' kangaroo rat *(Dipodomys stephensi)*
(C) Sierra Nevada red fox *(Vulpes vulpes necator)*
(D) San Joaquin kit fox *(Vulpes macrotis mutica)*

(A) *Chorizanthe howellii* (Howell's spineflower)
(12) Scrophulariaceae (Figwort Family)
(A) *Castilleja affinis* spp. *neglecta* (Tiburon Indian paintbrush)
(13) Verbenaceae (Vervain Family)
(A) *Verbena californica* (California vervain)
(c) Rare:
(1) Amaryllidaceae (Amaryllis Family)
(A) *Allium yosemitense* (Yosemite onion)
(B) *Bloomeria humilis* (dwarf goldenstar)
(2) Apiaceae (Carrot Family)
(A) *Lilaeopsis masonii* (Mason's lilaeopsis)
(B) *Sanicula maritima* (adobe sanicle)
(C) *Sanicula saxatilis* (rock sanicle)
(3) Asteraceae (Sunflower Family)
(A) *Blennosperma nanum* var. *robustum* (Point Reyes blennosperma)
(B) *Eriophyllum congdonii* (Congdon's woolly sunflower)
(C) *Hemizonia arida* (Red Rock tarplant)
(D) *Hemizonia minthornii* (Santa Susanna tarplant)
(E) *Machaeranthera lagunensis* (Mount Laguna aster)
(F) *Senecio ganderi* (Gander's ragwort)
(G) *Senecio layneae* (Layne's ragwort)
(4) Boraginaceae (Borage Family)
(A) *Cryptantha roosiorum* (bristlecone cryptantha)
(5) Brassicaceae (Mustard Family)
(A) *Caulanthus stenocarpus* (slender–pod jewel–flower)
(6) Campanulaceae (Bellflower Family)
(A) *Nemacladus twisselmannii* (Twisselmann's nemacladus)
(7) Crassulaceae (Stonecrop Family)
(A) *Dudleya cymosa* ssp. *marcescens* (marcescent dudleya)
(B) *Dudleya nesiotica* (Santa Cruz Island dudleya)
(8) Cyperaceae (Sedge Family)
(A) *Carex tompkinsii* (Tompkins's sedge)
(9) Ericaceae (Heath Family)
(A) *Arctostaphylos bakeri* (Baker's manzanita)
(B) *Arctostaphylos edmundsii* var. *parvifolia* (Hanging Gardens manzanita)
(10) Euphorbiaceae (Spurge Family)
(A) *Croton wigginsii* (Wiggins's croton)
(11) Fabaceae (Pea Family)
(A) *Astragalus johannis–howellii* (Long Valley milk–vetch)
(B) *Astragalus monoensis* var. *monoensis* (Mono milk–vetch)
(C) *Astragalus traskiae* (Trask's milk–vetch)
(D) *Lupinus padre–crowleyi* (Father Crowley's lupine)
(E) *Thermopsis macrophylla* var. *agnina* (Santa Ynez false lupine)
(F) *Trifolium polyodon* (Pacific Grove clover)
(12) Hydrophyllaceae (Waterleaf Family)
(A) *Eriodictyon capitatum* (Lompoc yerba santa)
(13) Liliaceae (Lily Family)
(A) *Calochortus dunnii* (Dunn's mariposa lily)
(B) *Calochortus persistens* (Siskiyou mariposa lily)
(C) *Chlorogalum purpureum* var. *reductum* (Camatta Canyon amole)
(14) Limnanthaceae (False Mermaid Family)
(A) *Limnanthes bakeri* (Baker's meadowfoam)
(15) Malvaceae (Mallow Family)
(A) *Sidalcea hickmanii* ssp. *anomala* (Cuesta Pass checkerbloom)
(B) *Sidalcea hickmanii* ssp. *parishii* (Parish's checkerbloom)
(16) Onagraceae (Evening–primrose Family)
(A) *Clarkia speciosa* ssp. *immaculata* (Pismo clarkia)
(B) *Oenothera californica* ssp. *eurekensis* (Eureka Dunes evening–primrose)
(17) Poaceae (Grass Family)
(A) *Agrostis blasdalei* var. *marinensis* (Marin bent grass)
(B) *Calamagrostis foliosa* (leafy reed grass)
(C) *Pleuropogon hooverianus* (North Coast semaphore grass)
(D) *Swallenia alexandrae* (Eureka Valley dune grass)
(E) *Tuctoria greenei* (Greene's tuctoria)
(18) Polemoniaceae (Phlox Family)
(A) *Eriastrum tracyi* (Tracy's eriastrum)
(19) Polygonaceae (Buckwheat Family)
(A) *Dedeckera eurekensis* (July gold)
(B) *Eriogonum butterworthianum* (Butterworth's buckwheat)
(C) *Eriogonum crocatum* (Conejo buckwheat)
(D) *Eriogonum giganteum* var. *compactum* (Santa Barbara Island buckwheat)
(E) *Eriogonum twisselmannii* (Twisselmann's buckwheat)
(20) Portulacaceae (Purslane Family)
(A) *Lewisia congdonii* (Congdon's lewisia)
(21) Ranunculaceae (Buttercup Family)
(A) *Delphinium bakeri* (Baker's larkspur)
(B) *Delphinium hesperium* ssp. *cuyamacae* (Cuyamaca larkspur)
(C) *Delphinium luteum* (yellow larkspur)
(22) Rhamnaceae (Buckthorn Family)
(A) *Ceanothus hearstiorum* (Hearst's ceanothus)
(B) *Ceanothus maritimus* (maritime ceanothus)
(C) *Ceanothus masonii* (Mason's ceanothus)
(D) *Ceanothus roderickii* (Pine Hill ceanothus)
(23) Rosaceae (Rose Family)
(A) *Ivesia callida* (Tahquitz ivesia)
(24) Rubiaceae (Madder Family)
(A) *Galium angustifolium* ssp. *borregoense* (Borrego bedstraw)
(B) *Galium buxifolium* (box bedstraw)
(C) *Galium californicum* ssp. *sierrae* (El Dorado bedstraw)
(25) Saxifragaceae (Saxifrage Family)
(A) *Bensoniella oregona* (bensoniella)
(26) Scrophulariaceae (Figwort Family)
(A) *Castilleja gleasonii* (Mt. Gleason Indian paintbrush)
(B) *Cordylanthus mollis* ssp. *mollis* (soft bird's–beak)
(C) *Cordylanthus nidularius* (Mt. Diablo birds–beak)
(D) *Cordylanthus tenuis* ssp. *capillaris* (Pennell's bird's–beak)
(E) *Holmgrenanthe petrophila* (rock lady)
(F) *Pedicularis dudleyi* (Dudley's lousewort)
(27) Sterculiaceae (Cacao Family)
(A) *Fremontodendron decumbens* (Pine Hill flannelbush)
(B) *Fremontodendron mexicanum* (Mexican flannelbush)

NOTE: Authority cited: Sections 1904 and 2070, Fish and Game Code. Reference: Sections 1755, 1904, 2062, 2067, 2070, 2072.7 and 2075.5, Fish and Game Code.

HISTORY

1. New section filed 10–11–78; effective thirtieth day thereafter (Register 78, No. 41).
2. Amendment of subsections (a)(10), (b)(10), (b)(17) and new subsections (a)(12)–(a)(27) and (b)(19)–(b)(21) filed 6–11–79; effective thirtieth day thereafter (Register 79, No. 24).
3. Amendment filed 8–9–79; effective thirtieth day thereafter (Register 79, No. 32).
4. Amendment filed 10–17–79; effective thirtieth day thereafter (Register 79, No. 42).
5. Repealer and new section filed 7–16–81; effective thirtieth day thereafter (Register 81, No. 29).
6. Amendment of subsections (a)(2)–(a)(4), (a)(10), (a)(16), (a)(17), (a)(20) and (a)(26) filed 12–18–81; effective thirtieth day thereafter (Register 81, No. 51).
7. New subsections (a)(7)(D), (a)(14)(E) and (F), (a)(18)(C), (a)(20)(E) and (F), (a)(25)(B), (a)(26)(H), (a)(27) and (a)(28) filed 1–13–82; effective thirtieth day thereafter (Register 82, No. 3).
8. New subsections (a)(4)(H), (a)(7)(E), (a)(14)(G) and (H), (a)(18)(D), (a)(24)(F), (a)(29)–(a)(31) filed 3–17–82; effective thirtieth day thereafter (Register 82, No. 12).
9. Amendment of subsection (a)(26) and new subsections (b)(2)(C), (b)(3)(F)–(H), (b)(16)(F), (b)(20)(F), (b)(21)(B), and (b)(24)–(27) filed 6–4–82; effective thirtieth day thereafter (Register 82, No. 23).
10. New subsections (b)(1)(B), (b)(3)(E), (b)(9)(F) and (G), (b)(11)(C), (b)(14)(C), (b)(17)(C), (b)(18)(D), (b)(20)(E), and (b)(22) and (23) filed 6–4–82; effective thirtieth day thereafter (Register 82, No. 23).
11. Amendment of subsection (a)(3) and new subsection (a)(26)(H) filed 4–20–84; effective thirtieth day thereafter (Register 84, No. 16).
12. Editorial correction filed 7–20–84 (Register 84, No. 29).
13. Amendment filed 8–3–84; effective thirtieth day thereafter (Register 84, No. 31).
14. Editorial correction of NOTE filed 9–20–85; effective thirtieth day thereafter (Register 85, No. 38).
15. Amendment filed 5–30–86; effective thirtieth day thereafter (Register 86, No. 22).

(E) *Arctostaphylos pacifica* (Pacific manzanita)
(F) *Arctostaphylos pallida* (pallid manzanita)
(17) Fabaceae (Pea Family)
(A) *Astragalus agnicidus* (Humboldt milk–vetch)
(B) *Astragalus lentiginosus* var. *sesquimetralis* (Sodaville milk–vetch)
(C) *Astragalus magdalenae* var. *peirsonii* (Peirson's milk–vetch)
(D) *Astragalus pycnostachyus var. lanosissimus* (Ventura marsh milk–vetch)
(E) *Astragalus tener* var. *titi* (coastal dunes milk–vetch)
(F) *Lotus argophyllus* var. *adsurgens* (San Clemente Island bird's–foot trefoil)
(G) *Lotus argophyllus* var. *niveus* (Santa Cruz Island bird's–foot trefoil)
(H) *Lotus dendroideus* var. *traskiae* (San Clemente Island lotus)
(I) *Lupinus nipomensis* (Nipomo Mesa lupine)
(J) *Lupinus tidestromii* var. *tidestromii* (Tidestrom's lupine)
(K) *Trifolium trichocalyx* (Monterey clover)
(18) Hydrophyllaceae (Waterleaf Family)
(A) *Eriodictyon altissimum* (Indian Knob mountainbalm)
(19) Lamiaceae (Mint Family)
(A) *Acanthomintha duttonii* (San Mateo thorn–mint)
(B) *Acanthomintha ilicifolia* (San Diego thorn–mint)
(C) *Monardella linoides* ssp. *viminea* (willowy monardella)
(D) *Pogogyne abramsii* (San Diego mesa mint)
(E) *Pogogyne clareana* (Santa Lucia mint)
(F) *Pogogyne nudiuscula* (Otay Mesa Mint)
(20) Liliaceae (Lily Family)
(A) *Fritillaria roderickii* (Roderick's fritillary)
(B) *Lilium occidentale* (western lily)
(C) *Lilium pardalinum ssp. pitkinense* (Pitkin Marsh lily)
(21) Limnanthaceae (False Mermaid Family)
(A) *Limnanthes douglasii* var. *sulphurea* (Point Reyes meadowfoam)
(B) *Limnanthes floccosa* ssp. *californica* (Butte County meadowfoam)
(C) *Limnanthes gracilis* var. *parishii* (Parish's meadowfoam)
(D) *Limnanthes vinculans* (Sebastopol meadowfoam)
(22) Linaceae (Flax Family)
(A) *Hesperolinon didymocarpum* (Lake County western flax)
(23) Malvaceae (Mallow Family)
(A) *Malacothamnus clementinus* (San Clemente Island bush mallow)
(B) *Malacothamnus fasciculatus* var. *nesioticus* (Santa Cruz Island bush mallow)
(C) *Sidalcea covillei* (Owens Valley checkerbloom)
(D) *Sidalcea oregana* ssp. *valida* (Kenwood Marsh checkerbloom)
(E) *Sidalcea pedata* (bird–foot checkerbloom)
(F) *Sidalcea stipularis* (Scadden Flat checkerbloom)
(24) Onagraceae (Evening–primrose Family)
(A) *Clarkia franciscana* (Presidio clarkia)
(B) *Clarkia imbricata* (Vine Hill clarkia)
(C) *Clarkia lingulata* (Merced clarkia)
(D) *Clarkia springvillensis* (Springville clarkia)
(E) *Oenothera deltoides* ssp. *howellii* (Antioch dunes evening–primrose)
(25) Poaceae (Grass Family)
(A) *Dichanthelium lanuginosum* var. *thermale* (Geysers dichanthelium)
(B) *Neostapfia colusana* (Colusa grass)
(C) *Orcuttia californica* (California Orcutt grass)
(D) *Orcuttia inaequalis* (San Joaquin Valley Orcutt grass)
(E) *Orcuttia pilosa* (hairy Orcutt grass)
(F) *Orcuttia tenuis* (slender Orcutt grass)
(G) *Orcuttia viscida* (Sacramento Orcutt grass)
(H) *Poa napensis* (Napa blue grass)
(I) *Tuctoria mucronata* (Crampton's tuctoria)
(26) Polemoniaceae (Phlox Family)
(A) *Eriastrum densifolium* ssp. *sanctorum* (Santa Ana River woollystar)
(B) *Navarretia leucocephala* ssp. *plieantha* (many–flowered navarretia)
(C) *Phlox hirsuta* (Yreka phlox)
(27) Polygonaceae (Buckwheat Family)
(A) *Chorizanthe orcuttiana* (Orcutt's spineflower)
(B) *Chorizanthe valida* (Sonoma spineflower)
(C) *Dodecahema leptoceras* (slender–horned spineflower)
(D) *Eriogonum alpinum* (Trinity buckwheat)
(E) *Eriogonum apricum* var. *apricum* (Ione buckwheat)
(F) *Eriogonum apricum* var. *prostratum* (Irish Hill buckwheat)
(G) *Eriogonum ericifolium* var. *thornei* (Thorne's buckwheat)
(H) *Eriogonum grande* ssp. *timorum* (San Nicholas Island buckwheat)
(I) *Eriogonum kelloggii* (Kellogg's buckwheat)
(28) Ranunculaceae (Buttercup Family)
(A) *Delphinium variegatum* ssp. *kinkiense* (San Clemente Island larkspur)
(29) Rhamnaceae (Buckthorn Family)
(A) *Ceanothus ophiochilus* (Vail Lake ceanothus)
(30) Rosaceae (Rose Family)
(A) *Cercocarpus traskiae* (Catalina Island mountain–mahogany)
(B) *Potentilla hickmanii* (Hickman's cinquefoil)
(C) *Rosa minutifolia* (small–leaved rose)
(31) Rubiaceae (Madder Family)
(A) *Galium catalinense* ssp. *acrispum* (San Clemente Island bedstraw)
(32) Saxifragaceae (Saxifrage Family)
(A) *Lithophragma maximum* (San Clemente Island woodland star)
(33) Scrophulariaceae (Figwort Family)
(A) *Castilleja campestris* ssp. *succulenta* (succulent owl's–clover)
(B) *Castilleja grisea* (San Clemente Island Indian paintbrush)
(C) *Castilleja uliginosa* (Pitkin Marsh Indian paintbrush)
(D) *Cordylanthus maritimus* ssp. *maritimus* (salt marsh bird's–beak)
(E) *Cordylanthus palmatus* (palmate–bracted bird's–beak)
(F) *Cordylanthus rigidus* ssp. *littoralis* (seaside bird's–beak)
(G) *Gratiola heterosepala* (Boggs Lake hedge–hyssop)
(b) Threatened:
(1) Amaryllidaceae (Amaryllis Family)
(A) *Allium munzii* (Munz's onion)
(2) Asteraceae (Sunflower Family)
(A) *Cirsium loncholepis* (La Graciosa thistle)
(B) *Cirsium rhothophilum* (surf thistle)
(C) *Verbesina dissita* (crownbeard)
(3) Boraginaceae (Borage Family)
(A) *Plagiobothrys strictus* (Calistoga popcorn–flower)
(4) Brassicaceae (Mustard Family)
(A) *Dithyrea maritima* (beach spectaclepod)
(B) *Rorippa gambellii* (Gambel's water cress)
(5) Crassulaceae (Stonecrop Family)
(A) *Dudleya stolonifera* (Laguna Beach dudleya)
(6) Fabaceae (Pea Family)
(A) *Astragalus clarianus* (Clara Hunt's milk–vetch)
(B) *Lupinus citrinus* var. *deflexus* (Mariposa lupine)
(C) *Lupinus milo–bakeri* (Milo Baker's lupine)
(7) Liliaceae (Lily Family)
(A) *Calochortus tiburonensis* (Tiburon mariposa lily)
(B) *Fritillaria striata* (striped adobe–lily)
(8) Linaceae (Flax Family)
(A) *Hesperolinon congestum* (Marin western flax)
(9) Philadelphaceae (Mock Orange Family)
(A) *Carpenteria californica* (tree–anemone)
(10) Polemoniaceae (Phlox Family)
(A) *Gilia tenuiflora* ssp. *arenaria* (sand gilia)
(B) *Navarretia leucocephala* ssp. *pauciflora* (few–flowered navarretia)
(11) Polygonaceae (Buckwheat Family)

(1) Petition Action Warranted.

(A) Listing. A species shall be listed as endangered or threatened, as defined in sections 2062 and 2067 of the Fish and Game Code, if the Commission determines that its continued existence is in serious danger or is threatened by any one or any combination of the following factors:

1. Present or threatened modification or destruction of its habitat;
2. Overexploitation;
3. Predation;
4. Competition;
5. Disease; or
6. Other natural occurrences or human–related activities.

(B) Delisting. A species may be delisted as endangered or threatened, as defined in sections 2062 and 2067 of the Fish and Game Code, if the Commission determines that its continued existence is no longer threatened by any one or any combination of the factors provided in subsection (i)(1)(A) above.

1. Status During Delisting Process. A threatened or endangered species petitioned for delisting shall retain its listed status throughout the delisting process.

2. Removal of Species. After the commission has determined that the petitioned action is warranted, a delisted species shall retain its listed status until 30 days after the Office of Administrative Law has approved the associated rulemaking file and filed the regulation change with the Secretary of State.

(C) Uplisting and Downlisting. A threatened species may be uplisted to endangered if its continued existence throughout all or a significant portion of its range is in serious danger of becoming extinct by any one or any combination of the factors listed in subsection (i)(1)(A) above. An endangered species may be downlisted to threatened if it is no longer in serious danger of becoming extinct but special protection and management are still required because of continued threats to its existence by any one or any combination of the factors listed in subsection (i)(1)(A) above.

(2) Petitioned Action Not Warranted. The commission shall enter its findings in the public records and the subject species shall revert to its status prior to the filing of the petition.

(j) Submission of Regulatory Document. The department shall prepare an Initial Statement of Reasons for Regulation Change (also called Pre–publication of Notice Statement), including an assessment of the potential for adverse economic impact pursuant to Government Code Sections 11346.5 and 11346.53, when listing, delisting or change in status is recommended in the Department's report prepared pursuant to subsection (f) of this section. This document shall be submitted to the commission staff at the commission meeting after final consideration of the petition if the commission makes a finding that the petitioned action is warranted.

NOTE: Authority cited: Sections 2071 and 2071.5, Fish and Game Code. Reference: Sections 2062, 2067, 2071, 2071.5, 2072, 2072.3, 2072.7, 2073.3, 2073.5, 2074.2, 2074.4, 2074.6 and 2075.5, Fish and Game Code.

HISTORY

1. New sections filed 5–30–86; effective thirtieth day thereafter (Register 86, No. 22).
2. Amendment of subsection (a) filed 8–31–90; operative 9–30–90 (Register 90, No. 42).
3. Amendment of section and NOTE filed 8–29–94; operative 9–28–94 (Register 94, No. 35).

§ 670.2. Plants of California Declared to Be Endangered, Threatened or Rare.

The following species, subspecies and varieties of California native plants are hereby declared to be endangered, threatened (as defined by section 2067 of the Fish and Game Code) or rare (as defined by section 1901 of the Fish and Game Code), as indicated:

(a) Endangered:
(1) Agavaceae (Agave Family)
(A) *Nolina interrata* (Dehesa nolina)
(2) Amaryllidaceae (Amaryllis Family)
(A) *Brodiaea coronaria* ssp. *rosea* (Indian Valley brodiaea)
(B) *Brodiaea filifolia* (thread–leaved brodiaea)
(C) *Brodiaea insignis* (Kaweah brodiaea)
(D) *Brodiaea pallida* (Chinese Camp brodiaea)
(3) Apiaceae (Carrot Family)
(A) *Eryngium aristulatum* var. *parishii* (San Diego button–celery)
(B) *Eryngium constancei* (Loch Lomond button–celery)
(C) *Eryngium racemosum* (Delta button–celery)
(4) Asteraceae (Sunflower Family)
(A) *Baccharis vanessae* (Encinitas baccharis)
(B) *Blennosperma bakeri* (Sonoma sunshine)
(C) *Cirsium ciliolatum* (Ashland thistle)
(D) *Cirsium fontinale* var. *fontinale* (fountain thistle)
(E) *Cirsium fontinale* var. *obispoense* (Chorro Creek bog thistle)
(F) *Eriophyllum latilobum* (San Mateo woolly sunflower)
(G) *Helianthus niveus* ssp. *tephrodes* (Algodones Dunes sunflower)
(H) *Hemizonia conjugens* (Otay tarplant)
(I) *Hemizonia increscens* ssp. *villosa* (Gaviota tarplant)
(J) *Hemizonia mohavensis* (Mojave tarplant)
(K) *Holocarpha macradenia* (Santa Cruz tarplant)
(L) *Lasthenia burkei* (Burke's goldfields)
(M) *Layia carnosa* (beach layia)
(N) *Lessingia germanorum* (San Francisco lessingia)
(O) *Pentachaeta bellidiflora* (white–rayed pentachaeta)
(P) *Pentachaeta lyonii* (Lyon's pentachaeta)
(Q) *Pseudobahia bahiifolia* (Hartweg's golden sunburst)
(R) *Pseudobahia peirsonii* (San Joaquin adobe sunburst)
(5) Berberidaceae (Barberry Family)
(A) *Berberis nevinii* (Nevin's barberry)
(B) *Berberis pinnata* ssp. *insularis* (island barberry)
(C) *Mahonia sonnei* (Truckee barberry)
(6) Boraginaceae (Borage Family)
(A) *Amsinckia grandiflora* (large–flowered fiddleneck)
(B) *Plagiobothrys diffusus* (San Francisco popcorn–flower)
(7) Brassicaceae (Mustard Family)
(A) *Arabis macdonaldiana* (McDonald's rock cress)
(B) *Caulanthus californicus* (California jewel–flower)
(C) *Erysimum capitatum* var. *angustatum* (Contra Costa wallflower)
(D) *Erysimum menziesii* (Menzies's wallflower)
(E) *Erysimum teretifolium* (Santa Cruz wallflower)
(F) *Rorippa subumbellata* (Tahoe yellow cress)
(G) *Streptanthus niger* (Tiburon jewel–flower)
(H) *Thelypodium stenopetalum* (slender–petaled thelypodium)
(8) Cactaceae (Cactus Family)
(A) *Opuntia basilaris* var. *treleasei* (Bakersfield cactus)
(9) Campanulaceae (Bellflower Family)
(A) *Downingia concolor* var. *brevior* (Cuyamaca Lake downingia)
(10) Caryophyllaceae (Pink Family)
(A) *Arenaria paludicola* (marsh sandwort)
(B) *Silene campanulata* ssp. *campanulata* (Red Mountain catchfly)
(11) Chenopodiaceae (Goosefoot Family)
(A) *Atriplex tularensis* (Bakersfield smallscale)
(B) *Nitrophila mohavensis* (Amargosa nitrophila)
(12) Convolvulaceae (Morning–glory Family)
(A) *Calystegia stebbinsii* (Stebbins's morning–glory)
(13) Crassulaceae (Stonecrop Family)
(A) *Dudleya blochmanieae* ssp. *brevifolia* (short–leaved dudleya)
(B) *Dudleya traskiae* (Santa Barbara Island dudleya)
(C) *Parvisedum leiocarpum* (Lake County stonecrop)
(14) Cupressaceae (Cypress Family)
(A) *Cupressus abramsiana* (Santa Cruz cypress)
(15) Cyperaceae (Sedge Family)
(A) *Carex albida* (white sedge)
(16) Ericaceae (Heath Family)
(A) *Arctostaphylos densiflora* (Vine Hill manzanita)
(B) *Arctostaphylos hookeri* ssp. *hearstiorum* (Hearst's manzanita)
(C) *Arctostaphylos hookeri* ssp. *ravenii* (Presidio manzanita)
(D) *Arctostaphylos imbricata* (San Bruno Mountain manzanita)

(b) Review of Petition for Completeness. An incomplete petition shall be returned to the petitioner by the commission staff within 10 days of receipt. A petition shall be deemed incomplete if it is not submitted on FGC-670.1 (3/94) or fails to contain information in each of the required categories set forth in subsection (d)(1).

(c) Notice of Receipt of Petition. Pursuant to Section 2073.3 of the Fish and Game Code, the commission staff shall submit a notice of receipt of an accepted petition to the Office of Administrative Law, for publication in the California Regulatory Notice Register, at the time the petition is transmitted to the department for evaluation. Notice of the receipt of a petition submitted by the department shall be submitted to the Office of Administrative Law for publication upon receipt. Notices shall contain the date and location of the Commission meeting at which the petition is scheduled for receipt.

(d) Department Initial Evaluation of Petition. (90–Day Review)

(1) Sufficient Scientific Information. The department's evaluation report, required pursuant to Section 2073.5 of the Fish and Game Code, shall contain an evaluation of whether or not the petition provides sufficient scientific information on the following petition components of Section 2072.3 of the Fish and Game Code to indicate that the petitioned action may be warranted:

(A) population trend;
(B) range;
(C) distribution;
(D) abundance;
(E) life history;
(F) kind of habitat necessary for survival;
(G) factors affecting the ability to survive and reproduce;
(H) degree and immediacy of threat;
(I) impact of existing management efforts;
(J) suggestions for future management;
(K) availability and sources of information; and
(L) a detailed distribution map.

(e) Consideration of Petition by Commission (rejection or acceptance).

(1) Rejection of Petition by Commission. Pursuant to Section 2074.2 of the Fish and Game Code, a petition will be rejected by the commission if it fails to include sufficient scientific information under the categories of Section 2072.3 of Fish and Game Code (subsections (d)(1)(A) through (L) above) that the petitioned action may be warranted. If the commission finds that the petition does not provide sufficient information to indicate that the petitioned action may be warranted, a notice of finding that the petition is rejected, including the reason for objections, will be published in the California Regulatory Notice Register.

(2) Acceptance of Petition by Commission. If the commission finds that the petition provides sufficient information to indicate that the petitioned action may be warranted, a notice of finding that the petition is accepted for consideration will be published in the California Regulatory Notice Register. If the petitioned action is to add a species to the threatened or endangered species list, the notice will declare the species a candidate.

(f) Department Review of Candidate Species. Pursuant to Section 2074.6 of the Fish and Game Code, within 12 months of the date of publication of notice of acceptance of a petition for consideration by the commission, the department shall provide a written report to the commission, based upon the best scientific information available to the department. This report shall indicate whether or not the petitioned action is warranted.

(1) Recommendations for Management and Recovery. Pursuant to Section 2074.6 of the Fish and Game Code, the department's status report shall contain a preliminary identification of the habitat which may be essential to the continued existence of the species and recommendations for management activities and other recommendations for recovery of the species.

(2) Solicitation of Data and Comments. In satisfying the requirements of Section 2074.4 of the Fish and Game Code, the department shall solicit both existing data on the candidate species from independent sources and comments on the petitioned action. During the status review period the department shall seek independent and competent peer review of the department status report whenever possible. For purposes of these regulations, peer review is defined as the analysis of a scientific report by persons of the scientific/academic community commonly acknowledged to be experts on the subject under consideration, possessing the knowledge and expertise to critique the scientific validity of the report. The department shall include in the status report a listing of the individuals and agencies that were given an opportunity to review the status report prior to its submittal to the commission. Any comments received shall also be included in the status report.

(3) Review Period for Department–Initiated Petitions. When a department–initiated petition is accepted by the commission for consideration, commission staff shall schedule receipt of the department's report prepared pursuant to Section 2074.6 of the Fish and Game Code for a commission meeting no sooner than 90 days from the date the notice of candidate species is published in the California Regulatory Notice Register.

(g) Receipt of Department's Status Report and Scheduling of Finding Hearing.

(1) Commission Meetings for Receipt of Report and Making of Finding. The commission shall receive the department's status report at a regularly scheduled meeting and provide for final consideration of the petition at the next scheduled meeting. Agendas for both of these meetings shall be distributed to all individuals requesting such notification.

(2) Upon Receipt by the Commission Office, Availability of Status Report. The Department's status report shall be made available for public review.

(h) Submission of Reports by Interested Parties During the Department's Review Period of Candidate Species.

(1) Time of Submission. Public comments, including critiques, rebuttals or comments on the petition or on the department's status review report, may be submitted in writing to the commission office or presented as oral or written testimony at the finding hearing on the petition. Interested parties who wish to submit a detailed written scientific report to the commission on the petitioned action must submit such report not later than the time the department submits its report pursuant to Section 2074.6 of the Fish and Game Code. Detailed scientific reports received after the department submits its review report may not be considered. The department shall provide interested parties with a preliminary estimation of the date the status review report will be submitted to the commission. Such estimations will be provided only upon written request and shall not obligate the department to submit the report at the time identified. The department shall reserve the right to submit the report at a later or earlier date. If, however, the report will be submitted appreciably earlier or later than the estimated date, the department shall notify those who made written requests at the earliest possible time. (Parties planning to submit scientific reports are encouraged to coordinate with the department during its review period and to share scientific information useful to the department in its review.)

(2) Solicitation of Comments. Interested individuals who wish to submit a detailed scientific report pursuant to subsection 670.1(h)(1) above may seek independent and competent peer review of this report prior to submission. All comments from the reviewers shall be included with the report to verify that peer review has been solicited. Failure to obtain peer review of privately prepared detailed scientific reports may be a factor considered by the Commission in its final determination on the petition.

(3) Availability of Detailed Scientific Report from Interested Individuals. Detailed scientific reports from private individuals shall be made available for public review upon receipt by the Commission office.

(i) Final Consideration of Petition by Commission. (Action warranted or not warranted.)

tional park. (Nonresidents see subsection (c)(4)(B) below for additional requirements)

(B) Nonresident Provisions. (Section 21.29 CFR) Nonresidents licensed to practice falconry in a state listed in Section 21.29(k), CFR, shall apply to the department (address given in subsection (a) above) for a permit to take raptors in California. Application shall be made on form FG 364 (1/96), (Request for Capture), which is incorporated by reference herein, and which shall be provided by the department upon request. If unsuccessful, the permit (form FG 364a (1/96), which is incorporated by reference herein) shall be returned to the department within five days after the expiration date (address given in subsection (a) above). The fee for the permit is $182.00 per bird as adjusted annually pursuant to Section 713 of the Fish and Game Code. Nonresidents shall only take raptors from the wild in accordance with the conditions of the permit.

Reporting Take Location. Permittee shall notify the department within 5 days of take of a bird from the wild, on form FG 364a (1/96), provided by the department. Such notification shall include the county of take and a description of the site in Township, Range, and Section format. A copy of a topographic map, with the capture site clearly indicated, shall be mailed to the department at the address indicated on the form (address given in subsection (a) above) within 14 days of take. The location reporting requirement is for all species listed in subsection (c)(4)(C) below, except red–tailed hawk, American kestrel, and great horned owl.

(C) Raptors Approved for Take From the Wild. (Section 21.29 CFR) Only the following raptors may be taken from the wild: Northern goshawk (*Accipiter gentilis*) (also see subsection (c)(4)(D) below), Cooper's hawk (*A. cooperii*), sharp–shinned hawk (*A. striatus*), red–tailed hawk (*Buteo jamaicensis*), ferruginous hawk (*B. regalis*), merlin (*Falco columbarius*), American kestrel (*F. sparverius*), prairie falcon (*F. mexicanus*) and great horned owl (*Bubo virginianus*).

Reporting Take Location. Permittee shall notify the department within 5 days of take of a bird from the wild, on form FG 363 (9/95), which is incorporated by reference herein, provided by the department. Such notification shall include the county of take and a description of the site in Township, Range, and Section format. A copy of a topographic map, with the capture site clearly indicated, shall be mailed to the department at the address indicated on the form (address given in subsection (a) above) within 14 days of take. The location reporting requirement is for all species listed in subsection (c)(4)(C) below, except red–tailed hawk, American kestrel, and great horned owl.

(D) Prohibition on Take of Northern Goshawks. (Section 21.29 CFR) Northern goshawks may not be taken from the wild at any time in the Lake Tahoe Basin as described below:

Those portions of Placer, El Dorado, and Alpine counties lying within a line beginning at the north end of Lake Tahoe, at the California–Nevada state line approximately four miles north of Stateline Point in the near vicinity of Mt. Baldy; westerly along the Tahoe Divide between the Lake Tahoe and Truckee River drainages to the intersection of the north line of Section 36, T17N, R17E, MDM; west along said north section line to the section corner common to section 25, 26, 35, and 36, T17N, R17E, MDM; south approximately one mile along the common section line; southwesterly to the intersection of the Tahoe Divide and Highway 267 in the near vicinity of Brockway Summit; southwesternly in the near vicinity of the Tahoe Divide to Mt. Pluto; south to Mt. Watson; westerly approximately two miles to Painted Rock; southerly approximately two miles along the Tahoe Divide to the intersection of Highway 89; southwesterly along the Tahoe Divide to Ward Peak; southerly approximately 30 miles along the Tahoe Divide to a point on the Echo Lakes Road; southeasterly along said road to Old Highway 50; southeasterly along Old Highway 50 to the intersection of the Echo Summit Tract Road; southerly along said road to Highway 50; easterly along Highway 50 to the intersection of the South Echo Summit Tract Road; southerly along said road to the Tahoe Divide; southerly along the Tahoe Divide past the Alpine county line to Red Lake Peak; northerly along the Tahoe Divide past Monument Peak to the California–Nevada state line; north on the state line to the point of beginning. NOTE: the area described above includes the entire basin of Lake Tahoe within California. The geographic boundary of the Lake Tahoe basin is also an area encompassed by the Lake Tahoe Basin Management Unit which is administered by the U.S. Forest Service. The Forest Service office is located in South Lake Tahoe, and maps depicting the boundary may be purchased there or obtained by mail. For ordering information call (916) 573–2600.

(E) Approved Methods of Take. (Section 21.29 CFR) Raptors may be taken by trap or net which do not injure the birds. All snare type traps must be attended at all times. All other traps must be identified with the name and address of the licensee and checked at least once every 12 hours.

(F) Eyas Bird Restriction. (Section 21.29 CFR) Eyas birds may be taken only by general or master licensees, and only from May 20 through July 15. No more than two eyas birds may be taken by the same licensee in any one year. In no case may all eyas birds be taken from any one nest. At least one eyas shall be left in a nest at all times.

(G) Passage Bird Restriction. (Section 21.29 CFR). Passage birds may only be taken from October 1 through January 31, except that a legally marked raptor which was lost or escaped may be taken at any time.

(H) Definition of Replacement Period. (Section 21.29 CFR) The 12 month period for replacing birds begins on March 1, of each year.

NOTE: Authority cited: Sections 200, 395, 1050 and 2120, Fish and Game Code. Reference: Sections 395, 713, 1050 and 1054.5, Fish and Game Code.

HISTORY

1. Amendment of subsection (d) filed 8–6–82; effective thirtieth day thereafter (Register 82, No. 32). For prior history, see Register 81, No. 45.
2. Editorial correction of subsection (b)(4)(C) filed 7–29–85; effective thirtieth day thereafter (Register 85, No. 31).
3. Amendment of subsections (a), (c), (d), (f) and (o) filed 1–31–86; effective upon filing pursuant to Government Code section 11346.2(d) (Register 86, No. 5).
4. Amendment of subsection (c) filed 8–12–87; operative 9–11–87 (Register 87, No. 33).
5. Amendment of subsections (c) and (l) filed 7–28–88; operative 8–27–88 (Register 88, No. 32).
6. Amendment of subsection (c) and NOTE filed 6–30–92; operative 7–30–92 (Register 92, No. 27).
7. Amendment filed 7–7–93; operative 7–7–93 (Register 93, No. 28).
8. Change without regulatory effect amending subsections (c)(1)(A), (G), and (H), (c)(2)(A), (C), (D), and (G), (c)(4)(A) and (C) and NOTE filed 9–8–93 pursuant to title 1, section 100, California Code of Regulations (Register 93, No. 37).
9. Amendment of subsections (c)(1)(I) and (c)(4)(B), (C), and (D) filed 4–21–94; operative 4–21–94 (Register 94, No. 16).
10. Change without regulatory effect amending subsections (a), (c)(1)(A), (c)(1)(I), (c)(2)(G), (c)(4)(B) and (c)(4)(C) filed 4–4–96 pursuant to section 100, title 1, California Code of Regulations (Register 96, No. 14).

§ 670.1. Listing of Endangered and Threatened Species.

(Note: These regulations were drafted to provide a petition form and rules and procedures governing the submission and review of petitions for listing, uplisting, downlisting and delisting of endangered and threatened species of plants and animals. The intent of the 1994 amendments is a smoother and more effective implementation of the California Endangered Species Act (CESA) through procedural clarity. While these amendments generally follow the chronology of the CESA statutes, they do not recreate each procedural step of the statutes in regulations.)

Pursuant to Sections 2071 and 2071.5 of the Fish and Game Code, the following rules and procedures shall govern the submission and review of petitions for listing, uplisting, downlisting and delisting of threatened or endangered species:

(a) Petition Requirement. Every person recommending that a species or subspecies be added to or removed from the State listing of endangered and threatened plants and animals or be changed in status (endangered to threatened or threatened to endangered) must submit a petition to the Fish and Game Commission, 1416 Ninth Street, Box 944209, Sacramento, California 94244–2090. Only petitions submitted on an authorized petition form (PETITION TO THE STATE OF CALIFORNIA FISH AND GAME COMMISSION, FGC–670.1 (3/94), which is incorporated by reference herein), available at the Commission office and offices of the Department of Fish and Game, will be considered by the Commission.

(b) Take of Game or Nongame Birds or Mammals.

Any person using raptors to take game or nongame birds or mammals shall abide by all laws and regulations related to hunting, including but not limited to licenses, seasons, bag limits, and hunting hours. Any protected bird or mammal inadvertently taken by a raptor must be removed from the raptor, as soon as practical, and left at the site.

(c) Additional State Regulations. State regulations included herein complement current federal regulations and are cross–referenced by use of the respective federal Title 50 CFR section numbers boldfaced and placed in parentheses.

(1) LICENSING.

(A) Application for License. The department shall provide information on application procedures. This information may be obtained by contacting the department (address given in subsection (a) above).

(B) Co–sign Requirement. (Section 21.28 CFR)

Persons under the age of 18 shall have a parent or guardian co–sign their license application.

(C) Substitution of Experience. (Section 21.29 CFR) The department shall consider an applicant's experience acquired in another state or country when evaluating an application for any class of license.

(D) Application Fee. In addition to the fee required by Fish and Game Code Section 396, the department shall charge an application fee. The base fee for this application is $7.50 as of January 1, 1993 (Note: This fee shall be charged effective July 7, 1993) and shall be adjusted annually per Fish and Game Code Section 713.

(E) Examination Requirement. (Section 21.29 CFR)

1. Minimum Score. Persons applying for their first license or for renewal of a license that expired prior to January 1, 1978, must correctly answer at least 80% of the questions on an examination provided and administered by the department.

2. Reexamination for Failing Score. (Section 21.29 CFR) Any applicant who fails to pass the examination may take another examination no earlier than three months from the date of the prior examination.

3. Substitutions of Passing Score from Another State. (Section 21.29 CFR) Applicants who provide documentation of having successfully passed a federally approved examination in a state listed in Section 21.29(k), CFR, will not be required to take the test.

(F) Classes of Licenses. (Section 21.29 CFR) Licenses will be issued in three classes, apprentice, general, and master, only to persons who meet all requirements and qualifications described in these regulations. The department may issue the class of license equal to that of the most recent license issued to a person from a state listed in Section 21.29(k), CFR.

(G) Suspension, Revocation or Denial of License. (Section 21.29 CFR) The department may suspend, revoke, or deny issuance or renewal of any falconry license if the applicant or licensee either fails to comply with any requirement of these regulations or has been convicted of a violation of any falconry regulations, including such regulations of a state listed in Section 21.29(k), CFR. For the purpose of this subsection, violation of a general hunting regulation is not a violation of a falconry regulation. An applicant or licensee whose license has been suspended, revoked, or denied may appeal to the Commission.

(H) Notification of Termination of Sponsorship. (Section 21.29 CFR) A sponsor shall immediately notify the department in writing (address given in subsection (a) above) in the event of termination of sponsorship for a licensee. The person requiring the sponsor shall acquire a new sponsor within 60 days of the receipt of the notification by the department. Failure to comply with this subsection will result in loss of qualifying time from the date sponsorship was terminated and no subsequent license will be issued until all requirements have been fulfilled.

(I) Report Requirement for Apprentices. (Section 21.29 CFR) Apprentice licensees must complete and submit a report of progress on a form approved by the department (FG 362 (9/95), which is incorporated by reference herein). This report must be signed and dated by both the licensee and sponsor. The report will be used to determine qualifying experience for future licenses.

(J) Department Inspection and Approval of Equipment and Housing. (Section 21.29 CFR) The equipment and housing required by these regulations shall be inspected and approved by the department prior to the issuance of a license, except the department may authorize a sponsor to inspect and certify that the equipment and housing of apprentice applicants meets or exceeds the minimum standards required by these regulations. Equipment or housing that does not meet the minimum standards required by these regulations shall not be certified by a sponsor. The department may enter the premises of any licensee at any reasonable hour to inspect all housing, equipment, or raptors possessed by the licensee, or to inspect, audit, or copy any permit, book, or record required to be kept by these regulations.

(2) AUTHORIZATION.

(A) Authorization of Licensed Nonresidents. (Section 21.29 CFR) Nonresidents licensed to practice falconry in a state listed in Section 21.29(k), CFR, are authorized to practice falconry in California. Citizens from another country are authorized to practice falconry in California only in accordance with a permit issued by the U.S. Fish and Wildlife Service. (See subsection (c)(2)(F) below for importation).

(B) Nonresident License Not Valid for Resident. (Section 21.29 CFR) Residents are not authorized to possess raptors or practice falconry by a license issued by another state or country.

(C) Temporary Transfer of Raptor. (Section 21.29 CFR) Any licensee who allows another person to temporarily possess any raptor as authorized by sections 21.28(d)(6) and 21.29(j)(4), CFR, shall mail a copy of completed federal Form 3–186A and a copy of the statement authorizing temporary possession to the department (address given in subsection (a) above) on the day the bird is transferred.

(D) Apprentice Restriction. (Section 21.29 CFR) Except as provided in subsection (c)(2)(E) below, apprentice licensees may only take or possess American kestrels (*Falco sparverius*) or red–tailed hawks (*Buteo jamaicensis*).

(E) Possession of Captive Bred Raptors from Rehabilitation Facilities. (Section 21.29 CFR) All licensees may possess and use birds acquired from department approved rehabilitation facilities or legally acquired captive bred birds.

(F) Importation of Raptors. (Section 21.29 CFR) Licensees may import raptors for falconry only if they submit written authority to export raptors from the originating state or country with the department's copy of federal Form 3–186A. Nonresident licensees from a state listed in Section 21.29(k), CFR, and resident licensees who take their birds out of state and are returning to California, are exempt from this requirement. Citizens from another country may import raptors under the authority of a permit issued by the federal government, (see Section 21.29 CFR).

(G) Possession of Infertile Eggs. (Section 21.29 CFR) Infertile eggs laid by a licensee's bird may be possessed if the licensee notifies the department (address given in subsection (a) above), in writing within 48 hours after the egg is laid.

(3) BANDING.

(A) Prohibition of Removal of Bands. (Section 21.29 CFR) Raptor bands may not be removed from raptors except by a department employee or a person authorized by the department. The loss or removal of any band must be reported to the issuing office on federal Form 3–186A within five (5) working days of the loss or removal of the band.

(B) Prohibition on Defacing Band. (Section 21.29 CFR) The alteration, counterfeiting or defacing of a band is prohibited except that licensees may remove the rear tab or may smooth any imperfect surface provided the integrity of the band and numbering are not affected.

(4) TAKING.

(A) Possession of Valid Falconry License Required For Take. (Section 21.29 CFR) Only persons with a valid falconry license in possession may take a raptor from the wild. Raptors may not be taken in any state or na-

APPENDIX 4

List of Individuals and Organizations
Receiving
The 2003 Draft Environmental Document
Regarding Bighorn Sheep

List of Individuals and Organizations
Receiving the 2004 Draft Environmental Document
Regarding Bighorn Sheep Hunting

1. Mr. G. Lynn Sprague, U.S. Forest Service, Vallejo, California
2. Mr. Wayne White, U.S. Fish and Wildlife Service, Sacramento, California
3. Mr. Mike Pool, Bureau of Land Management, Sacramento, California
4. Mr. John Reynolds, National Park Service, San Francisco, California
5. Director, California Department of Parks and Recreation, Sacramento, California
6. Ms. Virginia Handley, The Fund for Animals, San Francisco, California
7. Ms. Lois Kliebe, Sportsmen=s Council of Northern California, Redding, California
8. Ms. Kathy Lynch, Lynch and Associates, Sacramento, California
9. Mr. Gerald Upholt, California Rifle and Pistol Association, Sacramento, California
10. Mr. Keith Ringgenberg, Outdoor Sportsmen=s Coalition, Fresno, California
11. Ms. Camilla Fox, Animal Protection Institute, Sacramento, California
12. Mr. Wayne Pacelle, Humane Society of the United States, Washington, DC
13. Mr. Patrick L. Smith, United State Department of Agriculture, Sacramento, California
14. Ms. Shannon Hebert, United State Department of Agriculture, Portland, Oregon
15. Mr. Alan Sanders, Sierra Club, Los Padres Chapter, Hueneme, California
16. Mr. Mark Jorgensen, Anza Borrego Desert State Park, Borrego, California
17. Mr. Terry Anderson, Morango Valley, California
18. Mr. Stephen MAscero, Encinitas, California
19. President, Foundation for North American Wild Sheep, Cody, Wyoming
20. Mr. Leon M. Lesicka, Desert Wildlife Unlimited, Brawley, California